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ABSTRACT

This main volume of a two-volume final report presents findings of a national study of women students in area vocational-technical schools comparing and contrasting nontraditional women (those enrolled in programs where nationally 0% to 25% of the students are women) and traditional women (those enrolled in programs in which nationally 75% to 100% are women) to determine what factors are influential in students' selection of nontraditional or traditional occupational training in nonprofessional occupations and to analyze the data with regard to seven broad occupational areas and sex stereotypes of particular occupations. Chapter headings are (1) Introduction, (2) Executive Summary: Major Findings and Implications, (3) Demographic Characteristics of Students, (4) Educational Personnel, (5) Persons Influencing Decision-Making, (6) Impact of Counseling Methods and Techniques, (7) Relevance of High School Preparation, (8) Motivational Factors, (9) Problems and Difficulties of Women in Non-Traditional Vocational Training, (10) Employment of Students, (11) Alternative Occupations Considered by Women, and (12) Women in "Mixed" Vocational Training. The appendixes contain methodology and methodological tables, questionnaires, glossary, and statistical symbols. (Supplementary tables are in the second volume.) (HD)

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Final Report

Contract No. 300-75-0183

A Study of the Factors Influencing the Participation of Women in Non-traditional Occupations in Postsecondary Area Vocational Training Schools

Volume I -- Narrative Report

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Elizabeth Dee provided technical support throughout the conduct of the study and was responsible for the preparation of all statistical data. Ms. Dee, together with Alinda Fells, managed the production of the report, an enormous task given the nature of the data and information being presented. The work of Ms. Fells in the formating and presentation of the tabular data should be especially noted as should the work of Incha Kim and Catherine Dougherty in the final typing of the tables and manuscript.

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I. Introduction

The subject of career decision-making among non-professional women entering non-traditional occupations has received little attention from researchers, except for a few studies of adult women, particularly of apprenticeships. Until now, what little research that has been done has concentrated on women in professional non-traditional occupations.

This is a study of women in two-year postsecondary vocational education programs who are training to enter non-professional non-traditional occupations.

Our classification of programs by traditional and non-traditional categories is based on the statistics of national enrollment of students in postsecondary Area Vocational Technical Schools (AVTS). 1/ All programs in which 0.0 to 25.0% of the students nationally enrolled are women were considered non-traditional training programs, while all programs in which women are 75.1% to 100.0% of the students nationally enrolled were considered traditional vocational training programs. Programs with percentages of women nationally enrolled that are between these two extremes were labeled mixed vocational training programs. A detailed list of the postsecondary AVTS training programs by percent of women enrolled in each course nationally in the non-traditional, traditional and mixed categories is provided in the Appendix. (See Appendix Tables A-1 - A-3.)

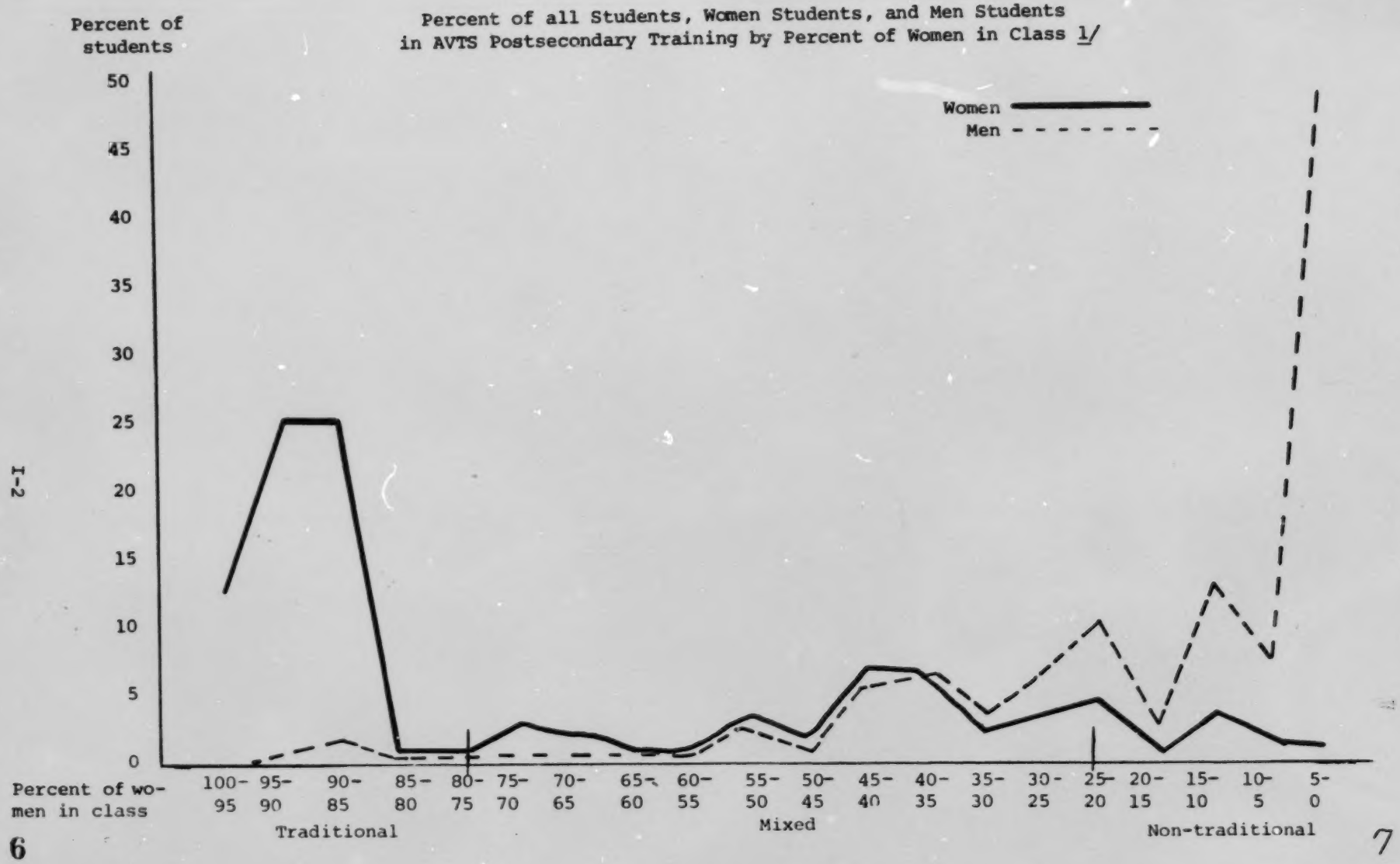
Most men vocational education students are in non-traditional training programs, and most women vocational education students are in traditional training programs. Seventy-two percent of all postsecondary men students are enrolled in non-traditional programs compared to only 9% of all postsecondary women students who are. On the other hand, only 4% of all men students are enrolled in traditional vocational education programs, while 62% of women students are enrolled in the traditional vocational education programs. Twenty-four percent of all men students and 29% of all women students are enrolled in mixed vocational training programs. The distribution of students is shown graphically in Figure 1.

In addition to looking at student characteristics by whether students are enrolled in non-traditional, traditional, or mixed training programs, data on students are also analyzed by broad subject areas of vocational education. They comprise seven occupational areas: health, home economics, business and office, distributive education, agriculture, technical, and trade and industrial education. Most programs in the agriculture, technical, and trade and industrial education areas are non-traditional; most programs in distributive education have a mixed enrollment; and most health, home economics, and business and office programs are traditional. Each of the broad subject areas includes some mixed occupations, however; and some of the subject areas have all three types of programs: non-traditional, traditional, and mixed. (See Appendix, Tables A-5 - A-7.)

1/ Based on an Office of Civil Rights Survey of Area Vocational Training Schools--1974 (See Methodology in Appendix).

Figure 1

Percent of all Students, Women Students, and Men Students in AVTS Postsecondary Training by Percent of Women in Class 1/



1/ OCR Postsecondary AVTS--1974

A third schema that is used in analyzing the data looks at the sex stereotypes of particular occupations. Each occupation carries a masculine, feminine, or neutral image. 1/ For example, home economics occupations are generally seen as feminine occupations, while occupations in the construction trades are generally seen as masculine occupations. Based on their actual enrollment and their stereotyped images, home economics occupations would be traditional/feminine, and occupations in the construction trades would be non-traditional/masculine. Some occupations, including many of the new and emerging technical occupations like environmental control technology or electronics technology, while they are non-traditional in terms of the low percentage of women enrolled nationally, are still relatively neutral in image. Although the masculine, feminine, and neutral concepts are by their nature subjective, they are an important consideration for women considering career alternative options, since there is less resistance on the part of society, including women themselves, to women's participation in neutral occupations than there is resistance to their participation in masculine occupations.

Our study analyzes the characteristics of women AVTS students utilizing all three schema. The major thrust of the analysis, however, utilizes the first set of variables and compares and contrasts Non-traditional women (those enrolled in programs where nationally, 0 to 25% of the students are women) and Traditional women (those enrolled in programs where nationally, 75% to 100% of the students are women) to determine what factors are influential in student's selection of non-traditional or traditional occupational training. Having defined the differences between the Non-traditional and Traditional women on particular issues in Chapters III-XI, we have in our final chapter, Chapter XII, made a preliminary analysis of the women in mixed training to identify differences between this group and the Non-traditional and Traditional women.

The third schema was utilized in analyzing the problems and difficulties of Non-traditional women. Types and incidences of difficulties of Non-traditional women were examined according to whether their training programs were masculine or neutral in image.

In addition to studying the characteristics of the postsecondary students themselves, another component of this study was a survey of educational personnel whom Non-traditional women in the sample had identified as being very influential in their selection of a non-traditional vocational education program. Information was requested from these educational personnel about techniques and methods that they perceived to be successful for identifying or encouraging young women who selected a non-traditional occupation. (See Student and Educational Personnel Questionnaires in Appendix.)

This study is limited to those postsecondary vocational education students that are enrolled in Area Vocational Technical Schools which unlike vocational education schools in general, prepare all their students

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1/ This concept is adapted from Saul Feldman who developed a similar schema for professional occupations. See Feldman, Saul D., Escape from the Doll's House, Carnegie Foundation for the Advancement of Teaching, 1974.

enrolled in vocational education programs for employment. Using enrollment data from the 1974 Office for Civil Rights, DHEW's survey of Area Vocational-Technical schools, a sample of the 280 postsecondary schools that had at least ten women students enrolled in non-traditional programs was developed. Officials in each school were contacted and asked if they would like to participate in the survey; 94 schools in 26 States agreed to participate.

At each school, questionnaires were sent to all non-traditional women students and to a random sample of the Traditional and Mixed women students. The Traditional and Mixed samples who served as a control group were selected by randomizing the mixed and traditional courses at AVTS schools nationally. Students from two mixed and two traditional programs were surveyed in each school. In all, 860 questionnaires from Non-traditional students, 650 from Mixed students, and 1,650 from Traditional students were completed in usable form. To achieve a more balanced sample for analysis purposes, the responses from the Mixed and Traditional women were randomly reduced and the data in this final report reflect the responses of 860 Non-traditional, 452 Mixed and 612 Traditional women students. In all cases, Non-traditional, Mixed, and Traditional students were analyzed separately. (See Appendix A - Methodology.)

Statistical data are presented in two forms throughout this report. Brief summary tables highlighting significant percentage differences between groups are found in the body of the text. Comprehensive back-up tables showing number of responses as well as percent distributions for all variables are found in Volume II. 1/

All statistics comparing Non-traditional and Traditional groups were tested for significance. Due to their limited sample size, significance tests were not applied against data for Mixed students or for the educational personnel.

In comparing the differences between Non-traditional and Traditional students, each variable with three or more optional responses was tested for significance of chi square. Differences between two proportions for the Non-traditional and Traditional samples or by variables within the Non-traditional group were also tested. Significance was reported, either for x^2, or for the difference between two proportions--the Non-traditional and Traditional proportions for the variable, a-a, b-b, or ϕ. 2/ The level of significance is indicated by the number of asterisks next to the variable or after the appropriate footnote, with $p < .05$ = *; $p < .01$ = **; and $p < .001$ = ***. (See Appendix A--Methodology, and Appendix D--Statistical Symbols.)

1/ In Chapters III through XI, summary tables compare Non-traditional and Traditional samples. In Chapter XII, summary tables compare Non-traditional, Mixed, and Traditional samples and reference is made to back-up tables in Volume II. All back-up tables compare Non-traditional, Mixed and Traditional samples.

2/ The symbol ϕ compares the difference between the identified category and the combination of all other categories on the vertical axis.

The following outline describes the chapters in the body of the report:

Chapter II, Executive Summary: Major Findings and Implications, summarizes the major findings in each Chapter and describes implications for further research and possible actions based on the findings.

Chapter III, Demographic Characteristics of Students, includes responses of the students concerning their parents occupational and educational characteristics, the students age, racial/ethnic background and household income.

Demographic profiles of the sample groups were compared to identify differences. The results indicate that demographic characteristics which have been shown to differentiate the Non-traditional women from the Traditional women in professional occupations, do not similarly differentiate Non-traditional and Traditional women in non-professional areas. Most of the demographic variables are used in other chapters to determine whether they significantly impact the response to other variables. Nearly all variables throughout the report were tested by age, urban/rural location, income, minority status, and parental characteristics.1/ Only where the variable affected the issue is it reported.

Chapter IV, Educational Personnel, gives background information on those educators who had been cited by the Non-traditional women as being very influential in their selection of non-traditional training. This is not a profile of all educational personnel, but only of those who were cited by Non-traditional women as very influential and who responded to the questionnaire. The Chapter also includes some data asked of the educational personnel which were not requested from the students. Where educational personnel were asked the same questions as the students, such as the usefulness of various counseling techniques or the importance of various school/non-school personnel in assisting in career decision-making, their responses are given in the text in order to contrast their responses with the students' responses on the same or similar issues.

Chapter V, Persons Influencing Decision-making, provides information about persons who had influenced students choices of vocational training areas. Students were asked to indicate the relative importance of a list of potentially influential persons that included non-school persons (identified by relationship to the student and sex) and school personnel (identified by position, level of school, and sex). It was expected that educational personnel, specifically women school personnel and counselors, would be the major influence for women students who had enrolled in non-traditional occupational training. The findings, however, did not support this hypothesis.

1/ Except for Blacks, there was not a sufficient number of responses in the sample for each individual racial/ethnic group even for preliminary analysis. Generally, Whites were compared to Blacks and then to all Minorities together, including Blacks.

Chapter VI, Impact of Counseling Techniques and Methods, provides information on students evaluation of the effectiveness of eight different methods and techniques which schools use to assist students in choosing careers. Overall, the responses to most methods and techniques indicated that students had little confidence in what was being offered by the schools. Not all techniques were used in all schools, which may have contributed to the negative responses.1/ Educational personnel were also asked to indicate if the different methods and techniques were useful for women considering non-traditonal occupations. The educators were further asked to indicate whether various techniques and methods were useful as mechanisms for providing support to women students already enrolled in non-traditional training, and which of the techniques and methods were offered in their own schools.

Chapter VII, Relevance of High School Preparation, provides information on students high school curriculum, the number of semesters of math and/or science they have taken, and their assessment of how well their high school had prepared them for their present training. A major concern in this chapter is whether the so-called math filter 2/ operates to restrict women from advancing effectively in their chosen area of vocational education.

Chapter VIII, Motivational Factors, examines why students choose particular areas of training and seeks to determine if the women choose traditional and non-traditional occupational training for different reasons. Educational personnel were also asked to indicate what they felt were reasons women students enroll in non-traditional training.

Chapter IX, Problems and Difficulties of Women in Non-traditional Vocational Training, provides information on whether women in non-traditional training have problems and difficulties and what problems they perceive themselves as having. Their responses were analyzed not only by demographic characteristics, but also by such variables as: number of other women in the class, the masculine/neutral schema, the percent of women enrolled in that program nationally, and broad classifications of training.

Chapter X, Employment of Students, describes the employment status of the Non-traditional and Traditional students. Students who had jobs were asked whether those jobs were related to their area of training, an

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1/ No data were requested from the student about a) whether or not a particular method was offerred at her school or b) if it were available, whether or not she had used the service. The extent to which specific methods and techniques are available is based on responses of educational personnel.

2/ The math filter may be defined as the fact that young women do not take as many courses in advanced mathematics as young men, which often precludes them from being able to enter non-traditional occupations, many of which require a strong math background.

important factor in reinforcing what they learned in school. They were also asked whether the school had assisted them in obtaining their jobs. Finally, the responses were analyzed to determine if schools, in helping their students find jobs, had helped them find jobs that were related to their area of training.

Chapter XI, Alternative Occupations Considered by Women, provides information on other occupations students had considered before they made their choices. Responses were analyzed to determine if any women who were not in non-traditional training had been interested in non-traditional occupations, and to determine the alternative occupations women who were in non-traditional training had considered.

Chapter XII, Women in Mixed Vocational Training, is a self-contained Chapter defining for the women in mixed training the issues that had already been analyzed for Non-traditional and Traditional students in the previous chapters. It is an attempt to explore, preliminarily, the possibility of mixed occupational training as a viable alternative for women who are seeking a broader opportunity but are not ready to choose male-dominated occupations.

The interpretations provided in this section are only preliminary. The objective of this analysis was to raise questions and establish hypotheses for further research to define the issues more precisely.

The Appendix includes our Methodology, the questionnaires (green for students in non-traditional vocational training, yellow for educational personnel, white for controls), a Summary of National Data on women in Non-traditional, Mixed, and Traditional training, a Glossary of terms used, and an explanation of the statistical symbols used throughout the report. Volume II includes the back-up tables for each chapter of Volume I. Back-up tables are designated by chapter by arabic numeral, e.g., Table III-6; Table references, such as Table III-6, would therefore, indicate a back-up table that can be found in Volume II. The summary tables that appear in the Volume I text are designated by chapter by letter, e.g., Table V-d; Table references such as Table V-d would therefore, indicate a table that can be found in Chapter V of Volume I.

II. Executive Summary: Major Findings and Implications

Although an increasing number of women have entered the labor force on a permanent basis in the past decades, they are still concentrated predominantly in relatively low-paying business, health and service occupations. This situation has become of growing concern to educators, employment and training experts, and other persons interested in improving the employment conditions of women.

There has been some research on the problems involved in preparing women for professional opportunities in non-traditional areas, i.e. women who are in colleges and graduate schools, but there has been comparatively little analysis of the problems involved in preparing women for employment opportunities in the non-professional, non-traditional occupations.

This study represents an initial effort to fill this information gap through a survey of women in occupational training in postsecondary Area Vocational Technical Schools (AVTS). The study has three primary objectives:

- to define the characteristics of women in postsecondary AVTS who are presently preparing to enter employment in non-traditional occupations;1/
- to identify the experiences that have influenced their decision to enter such training; and
- to determine the problems and difficulties they have experienced in their non-traditional education and training programs in postsecondary AVTS.

Furthermore, the study requested Non-traditional women to identify school personnel who had been very influential on their decision to enter non-traditional training. A secondary objective was to gather from these educational personnel insights and understandings of the problems involved with women's entry into non-traditional occupations which could be shared with other educational personnel.

In the body of the report we have attempted to define how the characteristics, responses, and understandings of women training for non-traditional occupations differ from women in training for traditional occupations.2/ The problems have been analyzed primarily from the point of view of the women, but also to a degree, from the point of view of the educational personnel who helped influence their decision-making. This Executive Summary highlights the findings of our study and outlines the implications of these findings for persons in education and employment and training, who are concerned with women's entry into non-traditional non-professional occupations.

1/ Women in AVTS vocational training in classes where nationally 0-25% of enrolled students are women.

2/ Women in AVTS vocational training in classes where nationally 75.1%-100% of enrolled students are women.

A. Demographic Characteristics of Students

1. Findings

a. Non-traditional students in postsecondary AVTS tend to be older, more urban and more likely to live in the Western states than Traditional students. Relatively more of the rural older women (30 years of age and over) are enrolled in traditional training. Compared to Traditional women, Non-traditional women's household incomes are likely to be either higher or lower. Traditional women's household incomes are more likely to be in the average range.

b. Overall, the characteristics of the parents of Traditional and Non-traditional women are similar. The differences that exist in parental education, fathers occupation, and mothers employment status proved to be of minimal significance.

2. Implications

Unlike studies done on professional women, little statistically significant demographic data have been identified in this study that differentiate Non-traditional, non-professional women from Traditional, non-professional women.

Additional research is needed to determine why the percentage of rural women over 30 years of age are training for traditional jobs. This could be due to the absence of jobs for women in non-traditional occupations in rural areas. Men, however, are being trained in these occupations and are, presumably, being placed. The causes of the lack of older Non-traditional women in rural areas should be examined. Reasons may include lack of appropriate background preparation, lack of jobs after they are trained, discriminatory practices, and/or that women in this age group in rural areas hold more traditional beliefs and therefore avoid non-traditional occupations.

Since a new expansion of employment opportunities has been reported in rural areas and small towns, there is a particular need to investigate this issue if women are to be able to avail themselves of all existing opportunities.

B. Educational Personnel

1. Findings

a. Educational personnel who were selected by Non-traditional women as being very influential in their choice of a non-traditional occupation tended to be men rather than women, teachers rather than counselors, and from postsecondary schools rather than from secondary schools. The largest single group of influential educational personnel named were male vocational

education teachers; 63% of all senior high school teachers and 92% of all postsecondary teachers who were identified by Non-traditional women as being very influential in their choice of occupational training programs were vocational education teachers, and 94% of all vocational education teachers named were men.

b. From the point of view of counselors and teachers, the woman student herself is the one who initiates the idea of non-traditional training. After the woman student herself, counselors believe that counselors are most likely to initiate such training, and teachers believe teachers are most likely to be the initiators.

c. Most schools leave it to their counselors and teachers to define the guidance program appropriate to students needs. The responses by educational personnel in the sample, however, indicated that guidance materials and other prepackaged programs are not likely to be utilized by counselors and even less likely to be utilized by the teachers. In both cases, the educators indicated only a moderate interest (43%) in being able to obtain guidance materials developed outside of their own schools.

2. Implications

a. Based on these findings, we would anticipate that most secondary and postsecondary school personnel would be reluctant to adopt model programs defined in guidance materials. Further study of patterns of utilization of guidance materials is needed. If the results of such a study corroborate such a possibility, then preservice and inservice training of teachers as well as counselors would be essential if effective assistance to students is to be achieved. Further investment in guidance manuals should include funds for such workshops to encourage their use.

b. The absence of junior high school personnel among the persons students identified as being influential suggests that although students are most likely to develop their interests in non-traditional occupations if exposed to them earlier, the women who have previously entered non-traditional training have done so without the early assistance of educational personnel.

C. Persons Influential in Encouraging Women to Enter Non-traditional Occupations

1. Findings

a. Non-traditional women were more influenced by men among both school and non-school persons, whereas Traditional women were more influenced by women.

b. More mothers than other persons were influential on Non-traditional students choice of training program, followed by husbands and fathers. School personnel were mentioned barely half as often as members of students immediate family as influencing women to undertake non-traditional training.

c. At all age levels more Traditional students were subject to influence than Non-traditional students. The influence of all persons decreased markedly on Non-traditional women 25 and over; this marked decrease does not occur for Traditional women until they are 30 and over.

d. Educational personnel select women counselors as persons most influential on Non-traditional students, followed by women teachers and men counselors. In all cases they select school personnel as being more influential than non-school personnel. The students, on the other hand, select men teachers, particularly vocational education teachers, as more influencial than other school personnel.

2. Implications

a. Although we had hypothesized at the start of this project that women educators would prove to be the most helpful of those in the school system to students considering non-traditional occupations, the results show clearly that this is not what is happening. In general, women educational personnel are sustaining the occupational stereotypes by supporting the Traditional women more than are any other educational personnel. Counselors have comparatively little influence on Non-traditional students and women counselors have less influence than men counselors. Since the majority of teachers identified as influential were teachers of vocational education courses, and since few non-traditional vocational courses are taught by women, it is not surprising, therefore, that women teachers have not been very influential on Non-traditional women.

b. Since postsecondary school personnel are apparently more important to Non-traditional students than are secondary school personnel, one can conclude that there is a need to expand the guidance function at the postsecondary level until opportunities for occupational exploration can be expanded and made more useful at lower school levels.

c. Teachers should be made aware of the impact they are having on students occupational choice. Male vocational education teachers have no special qualifications to provide assistance to women making career decisions, except for their enthusiasm for their trade. In teacher education programs, teachers are not trained to assist students in their career decision-making, and only rarely are they taught the essentials that will provide support to students. Clearly these teachers should be trained to assist women who enter their classes.

Since counselors have been trained to perform these services, part of their responsibility should be to assist others who are also likely to have influence with students in their decision-making, e.g. the parents and the teachers. Whatever influence parents and teachers have could be more constructively directed if they had the assistance of a counselor.

d. By the time a woman enrolls in a vocational education class, she has already made at least a preliminary career decision. On this basis, we can only conclude that many women are reaching these decisions on their

own. Although they were fortunate to have found a vocational teacher to encourage them, this cannot be interpreted as Non-traditional women receiving assistance in their career decision-making. The vocational educators enter the picture too late to actually assist in the decision-making, and are therefore only providing support and encouragement to the women.

This suggests that there should be more opportunity for women to explore a greater variety of non-traditional occupational tasks and courses earlier in their education, perhaps through career education or in having exposure and access to a greater variety of vocational courses at the junior and senior high school level. Assistance in decision-making should be provided as early as possible, since the earlier a woman makes the decision, or at least carefully examines her options, the more likely it is that she will prepare herself for the occupation in which she has developed an interest by taking the appropriate courses while still in high school (See Chapter VII, High School Preparation). Educational personnel who are equipped to assist women to make their decisions while they are still considering their career options are needed. If changes are to be made, it is likely that large scale in-service and pre-service programs are needed for all educational personnel. Unless such educational personnel are trained to assist them, only women able to make the decision on their own are likely to enter classes taught by non-traditional vocational teachers and subsequently to be influenced by them.

e. Parents are the most influential group on Non-traditional students, but, by and large, unless they have specific relevant information, the parents role is likely to be that of supporting and encouraging students rather than assisting them in their career decision-making.

Programs designed to assist women in occupational decision-making should include parental involvement as well as group discussions with peers. Both of these groups have the potential to have a significant positive influence on Non-traditional students decision-making. However, parent's lack of a broad base of occupational information may limit their ability to advise their daughters constructively.

It would appear that if parents are to be able to influence their daughters who are interested in non-traditional occupations, this influence should be brought to bear when the women are as young as possible. Early increase of occupational information to parents and consultation between school personnel and parents is likely to be beneficial to student's decision-making. (See Chapter VI, Impact of Counseling Methods and Techniques.)

D. Counseling Programs and Techniques

1. Findings

a. Women students and educational personnel were asked to indicate how useful counseling techniques and other methods designed to assist students had been in their choice of occupational programs. Fifty percent or more of the Non-traditional women considered each method or technique not useful. Teachers and counselors found virtually all techniques useful, but counselors and women educational personnel were more positive than teachers and other educational personnel about the usefulness of most of the counseling techniques.

b. Individual counseling, job site visitations, and career education were considered most useful by Non-traditional students as programs to assist women in making career decisions. Considering the limited number of students likely to have been involved in the program, a comparatively high percentage of Non-traditional women responded positively to career education.

c. Non-traditional women are less likely to be influenced by any counseling technique than women in traditional occupations; and women 30 years of age and over are less influenced than younger women.

d. Group counseling in any form is not considered very important by students; this is true even though the data indicate that the number and kinds of problems and difficulties perceived by Non-traditional women are reduced if there are more women students in their classes. (See Chapter IX, Problems and Difficulties).

e. Students considered parental involvement more important in their occupational choice than did educational personnel.

2. Implications

a. Programs designed to help students with their career decisions apparently are not performing their functions. The problem was expressed by all students, but is most serious for Non-traditional women. If the techniques that are available had been utilized at their maximum potential, many more women might have made their decision earlier and have used their high school years to better prepare for their transition to postsecondary occupational training.

b. There is a need for a systematic evaluation of each of the techniques designed to help students choose careers to determine how these techniques can best be utilized to encourage women who might have the interest and aptitude to prepare for non-traditional careers and to support them once they have made the decision. At present, women who enter non-traditional vocational training have apparently relied on their own sources of information to make their decision. Only after they have enrolled in the program do many women receive support for their occupational choice.

c. The responses from Non-traditional students on career education was mixed, but sufficiently positive to warrant further study. On the one hand, there was a markedly higher (16 percentage points) response among Traditional women, which suggests a greater emphasis on traditional careers for women in career education. On the other hand, the positive response among Non-traditional women was almost as high as the percentage who responded positively to individual counseling, although individual counseling, unlike career education, was a program available to virtually all students. In addition, there is evidence that students are confused between career orientation and career education.

There is a need to explore further the role of career education in stimulating women's interest in non-traditional careers. If further study supports the preliminary findings, this opens the possibility of expanded utilization of career education as a method for encouraging more women to enter non-traditional training.

E. Relevance of High School Preparation

1. Findings

a. More than half (54%) of all Non-traditional women considered that their high school education had not prepared them for their postsecondary vocational training, compared to only 25% of the women in traditional training. At every age, Non-traditional women felt less prepared than Traditional women. Younger women, recently out of high school, felt more prepared than women in other age groups.

b. As women progress through junior and senior high school, they take progressively fewer math courses than men at each grade level. This reduces their ability and opportunity to enter non-traditional occupations. This problem, called the "math filter", has been clearly identified for women preparing for professional careers. It was hypothesized that a similar math filter also made it difficult for women to enter training for non-professional skilled and technical occupations that are non-traditional. To determine this, the number of mathematics and science courses taken by women in non-traditional training was studied to determine if math and science acted similarly on young women in traditional and non-traditional occupations. The responses indicated that distribution of numbers of math and science courses taken by Non-traditional and Traditional students were virtually the same. However, almost 70% of the Non-traditional women who had had less than four courses in math and science combined felt that they had not been adequately prepared in high school. Even among Non-traditional women who had had nine or more math and science courses combined, 47% still felt that high school did not prepare them for their postsecondary program. Among Traditional women, on the other hand, there were few differences in their perception of the adequacy of their high school preparation reflecting the number of math and science courses that they had taken.

c. The largest group of Non-traditional women who felt prepared were those who had been enrolled in the same vocational subject areas in secondary and postsecondary schools. However, only 6% of the Non-traditional women's secondary and postsecondary courses matched in this way. Where no similar vocational program was taken, 56% of the Non-traditional women felt unprepared.

d. Non-traditional women in trades and industry, technical and agricultural programs in high school felt better prepared for their postsecondary program than did Non-traditional women in other curricula. Women in the general curriculum felt least prepared, followed by those in business, health, and home economics curricula in high school.

e. Sixty-three percent of minority Non-traditional women felt unprepared; 69% of Non-traditional women with an income under $5,000 felt unprepared and, 57% of urban Non-traditional women felt unprepared; these data, taken together lead us to the conclusion that urban inner city high schools are failing their women students who are considering entering non-traditional postsecondary training at an even greater rate than all other schools.1/

2. Implications

a. Many of the Non-traditional students who feel that high school did not prepare them for postsecondary training feel this to be the case because most of them had not had a non-traditional vocational training course in high school. It is possible that the women who did take these courses in high school have entered the labor force directly upon graduating from high school. It is equally possible that there are fewer women who are preparing for non-traditional occupations at the high school level than even the limited number at the postsecondary level. It is therefore essential to complete the picture of women in non-traditional training by determining the characteristics of the Non-traditional high school students in order to determine how well they were prepared, what problems they had, whether most did indeed enter the labor force upon graduation from high school, the types of jobs they obtained, and their successes in their chosen occupations.

b. The percentage of Non-traditional women who felt that high school had not prepared them for postsecondary education was directly correlated to the number of mathematics and science courses that they had taken in high school, and no similar relationship existed for women in traditional training. When Non-traditional women were questioned directly as to their problems and difficulties (see Chapter IX, Problems and Difficulties) however, only a small percentage of them considered that men were better prepared than they because the men had a greater math and science background. These findings suggest that although math and science are critical factors determining the adequacy of the high school preparation of Non-traditional women, there are other problems which also contribute to women's feelings that they lack preparation for their postsecondary training.

1/ Minority women enter non-traditional training in relative proportion to their presence in the population.

It would appear that although the math and science filter exists for women training to enter non-professional, non-traditional occupations, an increase in the number of math and science courses taken in high school would still leave close to half of the Non-traditional women feeling unprepared for reasons other than their lack of math and science courses. With so large a percentage still feeling unprepared, further investigation is warranted to identify as closely as possible whether the math or science courses taken were appropriate to the women students needs or whether there are critical courses that women need in order to prepare themselves to train in postsecondary non-traditional vocational education programs.

c. Low-income, urban, minority women in non-traditional training felt least prepared for their postsecondary vocational education programs. One would expect that many in this population would have special problems when undertaking postsecondary non-traditional training programs. Special programs in urban high schools are needed to address the problem. Efforts should be made to improve the educational base of these students.

F. Problems and Difficulties

1. Findings

a. Among a list of suggested problems, almost two-thirds of all Non-traditional women expressed having some problem or difficulty in adjusting successfully to their training; these problems were largely in three areas:

- Their fellow male students have difficulty in adjusting to women. They did not indicate teachers and counselors as having this difficulty;
- Men were better prepared for their postsecondary vocational education courses;
- Men had taken more technical subjects (rather than math and/or science) which made the men better prepared.

b. The study indicates that there are two key variables that affect the existence and extent of problems and difficulties--one is the age of the student and the other is the number of women in the classroom:

- More women in their 20's have problems and difficulties than women who are older or younger. Not only do more women in their 20's have problems, but each of them is likely to have more problems;
- The larger the number of women students in a class, the smaller the percentage of women who have problems. In classes with 4 or more other women, there is a much lower percentage of women who perceive problems or who perceive more than one problem, as compared to classes that have fewer women;

- In the perception of Non-traditional women, teachers find it more difficult to adjust to women when there are very few of them in the class.

c. Women enrolled in non-traditional subjects where nationally only 0-10% of students enrolled are women, were more than twice as likely to consider the men in the class to be better prepared than women in non-traditional subjects where nationally 10-25% of students enrolled are women.

The non-traditional occupations were further separated into two types: those that were masculine in stereotype (e.g., construction trade, auto mechanics) and those that were neutral (these usually were newer occupations that were less well know). 1/ Analysis of the women enrolled in these two types of occupational programs revealed marked differences. Women in the masculine-imaged classes had more problems compared to women in neutral-imaged classes. The women in masculine-imaged classes feel that both male classmates and teachers have more difficulty adjusting to them. Two-thirds of these women feel that Men Are Better Prepared compared to less than one-third of all Non-traditional women; and 89% of this special group feel that they have more difficulties because Men Have Had More Technical Subjects, compared to 71% of all Non-traditional women.

2. Implications

a. A large percentage of Non-traditional women perceive problems because men students had difficulty adjusting to them. This problem might be reduced if men and women counseled together as a group to create a learning atmosphere in the classroom that is suitable for women and men students. A similar problem might exist for men who are enrolled in subjects where students are predominantly women and the problem might be similarly addressed.

b. A great deal of emphasis has been placed on the needs of the older women returning to the labor force, and a variety of programs have been established to meet the needs of older women. The study indicates, however, that the women over 30 have fewer problems in non-traditional classes and are apparently making a better adjustment to non-traditional training than do women in their 20's in such classes.

Women in their 20's are the group that seems to find the adjustment to non-traditional training most difficult. Women in this age group most often felt unprepared by their high schools for their postsecondary non-traditional training. Many were working while simultaneously attending school in order to improve or change their skills. (See Chapter VII, High School Preparation and Chapter VIII Motivational Factors.) No special programs have yet been devised for women of this age group. Experimental programs might be instituted to determine specifically the needs of the women in their 20's.

1/ A full list of masculine and neutral non-traditional occupations is in the Appendix.

c. Teachers and men students are apparently better able to adjust to women when there are more of them in a predominantly male classroom. Since many non-traditional classes offer little opportunity for women to gain this kind of support, if more than one section of a course is being taught, wherever possible, women should all be scheduled into the same classroom. So clear cut is this issue of group support that the negative responses on the part of the women to group counseling indicate a probable lack of availability of group counseling activities. Experimental programs should be established that would utilize group counseling techniques to provide the support necessary that apparently exists when there are few women in the classroom. (See Chapter VI, Group Counseling--Women Only.)

d. There was sufficient evidence to warrant further study to determine if the analysis based on the masculine-neutral schema could provide a method of speeding the movement of women out of traditional jobs. This could be done by encouraging women to enter neutral non-traditional jobs where they are likely to encounter less difficulty and resistance than in masculine non-traditional jobs. Greater information is needed to define the differences between the masculine non-traditional and neutral non-traditional occupations.

G. Motivational Factors

1. Findings

a. Interest and ability in the occupational area is far and away the most influential factor in encouraging women to enter non-traditional training; over 80% of both students and educational personnel considered this a very important motive; over 96% of the students considered it either important or very important.

b. Good working conditions--steady work, many available jobs, and opportunity for advancement--were the next most important factors influencing choice of occupations for both Traditional and Non-traditional women.

c. Earnings have been considered a key factor motivating women to enter non-traditional occupations. This commonly held assumption was also expressed by educational personnel who considered Earnings a major factor influencing the Non-traditional students. Student responses, however, showed that Earnings was not as important a factor for Non-traditional women (37% very important) as it was for Traditional women (42%) (and earnings were even more important for Mixed women (52%). (See Chapter XII-Mixed Occupations). Both low income and minority women considered earnings a more important factor in their choice of occupational training programs than more affluent or White women.

d. The desire to change or improve skills is more important to women in their 20's than it is to other women, regardless of whether they are training for traditional or non-traditional occupations. This factor increases in importance for women 21-24 years of age. The desire to improve skills reaches its height among those 25-29 years of age and drops again among those 30 and over.

2. Implications

a. Interest and Ability should be utilized as a factor in attracting women into non-traditional occupations. It is very clear that stimulation of interest and abilities depends importantly on an early start, yet there is little evidence that women are obtaining the essential early exposure and encouragement which will broaden their career interests and provide them with experiences that will increase their abilities. Opportunities for young women to broaden their interests and experiences should be similar to that which is available to young men at the same stage in their development.

b. Since earning more money is presumed to be the major reason for women to enter non-traditional training, it has been used as a major factor in encouraging women to enter non-traditional occupations. If, as the findings from this study suggest, this issue is of lesser importance to all students except the very poor student and minority students, then emphasis on Earnings is not likely to attract as many women to enter non-traditional occupations as emphasizing other issues, such as Ability and Interest, and Working Conditions. Increasing information about non-traditional job openings is not sufficient in itself to encourage women to enter these jobs. They must also be assured that they have or could acquire the abilities in the occupation. To do this, women should be given opportunities to perform tasks similar to those of the occupations that they are interested in. Such job experiences should be acceptable ways for young women who are considering non-traditional occupations to increase their knowledge about and interest in various careers.

H. Employment of Students

1. Findings

a. More Non-traditional students (58%) were employed than Traditional students (47%). Women who were employed are most likely to live in urban areas, have a higher family income, be less than 30 years of age, and be enrolled in a business or distributive education program.

b. Although a greater percentage of Non-traditional students are employed, more Traditional students (60%) than Non-traditional students (48%) are employed in occupations related to their area of study.

c. Overall, only a small proportion of the students were placed in their jobs with the assistance of their schools. Schools placed more Traditional students (34%) than either Non-traditional (24%) or Mixed students (24%).

d. In all cases where the school helped find a job for a student it was more likely to relate to the women's area of study. However, of the jobs obrained by the school, 84% of the Traditional, but only 66% of the Nontraditional and Mixed students were placed by the schools in job related to their area of training.

2. Implications

Cooperative education, the combination of classroom and on-the-job training, in one form or another has long since proven its worth in providing students with their best opportunity of acquiring skills. Data indicate that when the school helps, women are more likely to obtain jobs that are related to their training; however, schools place comparatively more of the women in traditional training than in non-traditional training. A comparative study is needed to determine whether men in these training programs also have more difficulty in obtaining jobs related to their area of specialization, particularly those studying non-traditional subjects in Trade and Industrial, Technical, and Agricultural programs where there is a lower rate of employment among women than those enrolled in training for other occupations. Models to assist schools in placing Non-traditional women in related training should be developed.

Schools that are not currently involved in providing placement services to the students should consider the benefits to the students of offering this Service. As an alternative, the school could develop a close relationship with a job placement agency that could assume the responsibility for providing placement service to the students in course-related placements. Schools that do provide placement service to their students should monitor their own placement records to see that women who are seeking non-traditional job placements are receiving the same level of assistance that is available to women seeking traditional job placements.

I. Alternative Occupations Considered by Women

1. Findings

a. The women students were asked if they had considered any occupations other than the one in which they were presently enrolled. Fewer Traditional women (67%) considered entering occupations other than the one for which they were presently enrolled than Non-traditional women (73%) or Mixed women (77%).

b. Traditional women who did consider alternative occupations, considered other traditional occupations most often (48%), mixed occupations next (40%) and non-traditional occupations least (13%). Non-traditional women's alternative occupations were almost equally divided among traditional, mixed and non-traditional occupations. Forty-seven percent of Mixed women's alternative occupations were traditional, 37% were mixed and 16% were non-traditional.

c. At least a third of the women in each training group considered mixed occupations as alternative career choices, 36% of the Non-traditional women, 37% of the Mixed women, and 40% of the Traditional women.

2. Implications

In examining the potential pool of women who could enter into non-traditional occupations, one consideration might be those Mixed and Traditional women who had considered non-traditional occupational training as a serious alternative, but who decided finally to enroll in a subject area that was mixed or traditional. Of those considering alternatives, only 13% of the Traditional women and 16% of the Mixed women, however, considered non-traditional training opportunities.

This suggests that there is only a limited interest on the part of women at present to consider non-traditional training. On the other hand, there apparently is a larger pool of women interested in the mixed occupations. It would appear that there is a large group of women who could be encouraged to enter the mixed occupations, and that the results of a strategy to inform women about these opportunities are likely to have a greater effect on broadening women's career choice than attempting to move women only from traditional to non-traditional occupations.

J. Women in Mixed Vocational Training 1/

1. Findings

a. With few exceptions, the demographic characteristics of the Mixed women were similar to those of the Non-traditional and Traditional women. Where there were differences, however--urban/rural location, age, some parental characteristics--the Mixed students' characteristics were more similar to those of Traditional students. Only when women moved away from traditional behavior,or when institutions responded negatively to non-traditional behavior,were Mixed women likely to be more like Non-traditionals.

b. In identifying those who were influential in their choice of careers, Non-traditional women were influenced more often by men and Traditional women were influenced more often by women. The Mixed women tended to be in the middle; they were influenced more often by men than women,but not to the extent that Non-traditional women were influenced by men. For those Mixed women who had been influenced in their career choice at the secondary level, men and women were of about equal importance; for those Mixed women who had been influenced at the postsecondary level, however, men tended to be more important.

c. In identifying an important event that had influenced their choice, Mixed women tended to identify negative issues such as unsuccessful job seeking, dissatisfaction with another job, need to provide financial support, and a change in family situation (generally associated with financial problems).

1/ Women in training in occupations that have 25.1%-75.0% enrolled nationally. See Appendix for list.

These events represented 40% of the events reported by women training for mixed occupations, compared to 28% and 33% of the Non-traditional and Traditional students, respectively, who mentioned such events as an important factor.

d. The high school education of the mixed group included a lower percentage of women in general education than either of the other two groups. However, the percentage of Mixed women in college preparatory curriculum was similar to the Non-traditional students and the percentage of Mixed women in vocational education, particularly business and office education, was similar to the Traditional women.

e. Relatively more women in the mixed group had extensive math backgrounds than either the non-traditional or traditional groups. The percentage of women in the mixed sample whose high school vocational education curricula was related to their present training was also high. Nineteen percent of the women in training for a mixed occupation had matched secondary and postsecondary vocational curricula. Even so, the percentage of Mixed women who felt that high school had not prepared them was greater than for Traditional women.

f. The issue of earnings is a key factor in the selection of training for the women in Mixed occupations. Fifty-two percent of Mixed women compared to 37% of Non-traditional and 42% of Traditional women consider earnings very important. Only 6% of Mixed women considered it not important. Mixed women, rather than the women in non-traditional training, are clearly the group for whom the selection of an occupation was influenced by the amount of money they would be earning.

g. The percentage of Mixed women who are employed is midway between the percent of Traditional and Non-traditional women who are employed. Less than half of all Mixed women are employed in jobs that are related to what they are studying; a situation similar to that experienced by Non-traditional women. Mixed women are similar to Non-traditional women in the percentage who were assisted by the school to obtain jobs (24%) and in the percengage who had a related job obtained by the school (66%). In both cases, there was a significantly higher percentage of Traditional women helped by the school (34% and 84%).

h. A large percentage of Mixed women (47%) had considered a traditional occupation as an alternative, before they decided to enter their selected mixed occupation. In some cases, the Traditional occupation they had considered was in the same broad subject area as their final mixed choice, suggesting that higher earnings may have been an important consideration in their shift from a traditional to a mixed occupation in the same broad field.

i. More Mixed women (77%) considered an alternative occupation than did either Non-traditional (73%) or Traditional (67%) women. Of the alternatives considered, 37% of Mixed women examined other mixed occupations, and 47% examined traditional occupations (as large as the percentage of Traditional students who had considered them). A comparatively small 16%

considered non-traditional occupations. There is a marked inter-relationship between traditional and mixed occupations making it easier for Traditional women to move into mixed occupations, but little apparent movement from the mixed occupations to the non-traditional occupations.

2. Implications

Data from our study (see Alternative Occupations) indicate that the proportion of women in the sample--Non-traditional, Mixed, and Traditional--who considered entering training for a mixed occupation was much higher than the actual proportion of women who were enrolled in mixed training programs. Over a third (37%) of the Traditional women who considered an alternative occupation considered occupations that were mixed. The data suggest that there is no lack of women who, with a little more information, support, and encouragement, might be willing to enter mixed occupational training. On the other hand, only 13% of the Traditional women and 16% of the women already in mixed training considered non-traditional occupations as alternatives. This would suggest that one cannot expect a major shift into non-traditional occupations in the immediate future. There is no question but that young women's own perceptions have been a major obstacle to their movement into the non-traditional occupations. But until the barriers created by the schools, society, and the women themselves are removed, there is little likelihood that rapid movement of women into non-traditional training will occur. The mixed occupations offer the potential for developing a different strategy to move women away from traditional occupations.

An increase of women in mixed training might help women to move away from their present overconcentration in traditional occupational programs and open a new, challenging, and, we believe, fruitful area, offering promise in assisting women to overcome traditional perceptions of women's education and employment.

We are attempting here only to set forth the issue. The total picture suggests that there are a large number of women who are seeking a role other than the traditional one, and that the patterns are sufficiently consistent to support the contention that the Mixed women are a separate group with characteristics that differ from both the Traditional and the Non-traditional women. In order to explore this possibility, this preliminary analysis of the characteristics of women in mixed occupational training and the issues that are related to their career decision-making was undertaken. Further exploration is needed to test this hypothesis.

III. Demographic Characteristics of Students

This section examines the demographic characteristics of the students in the non-traditional and traditional samples in terms of age, racial distribution, family income, fathers occupation, mothers employment status, mothers occupation, and number of years mother had worked. (See questionnaire in Appendix.)

A. Geographic Location of Students

Three quarters (76%) of the students in the non-traditional sample and two-thirds (67%) of the students in the traditional sample lived in urban areas.

Table III-a. -- Urban/rural distribution of students

Location	Students in location (percent)	
	Non-traditional	Traditional
Urban***	75.7	66.7
Rural***	24.3	33.3

Students from the West were heavily represented in the non-traditional Sample. Forty percent of all students in the non-traditional sample lived in the Western region 1/ compared to 30% who lived in the South 2/ and 31% who were in the Northeast/North Central region (NE/NC) 3/.

1/ States represented in the sample from the West included: Arizona, California, Oregon, Washington, Wyoming.

2/ States represented in the sample from the South included: Georgia, Kentucky, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.

3/ Schools from the Northeast region were combined with those from the North Central region because the small number of students participating from those areas (See Methodology, Appendix A). Schools represented in the sample from the NE/NC included: Connecticut, Illinois, Iowa, Kansas, Maine, Massachusetts, Michigan, Minnesota, North Dakota, Ohio, Wisconsin.

Table III-b. -- Regional distribution of students

Region	Students in the region (percent)	
	Non-traditional	Traditional
South ***	29.5	40.5
Northeast/ North Central	30.7	31.9
West ***	39.8	27.6

The traditional sample, on the other hand, was heavily represented by students from the South. Forty-one percent of the Traditional students lived in that region, while 28% lived in the West and 32% lived in the NE/NC.

An analysis of the regional distribution of Traditional and Non-traditional students by urban/rural area reveals further differences. Among urban Non-traditional students, a larger proportion are from the West (44%) than from the South (29%) or the NE/NC (27%). More rural Non-traditional students came from the NE/NC (42%) than from the South (31%) or the West (27%). While the urban Traditional students are about equally represented in the three regions, most of the rural Traditional students are from the South (55%). Only 18% of rural Traditional students lived in the West and only 27% lived in the NE/NC.

Table III-c. -- Regional distribution of urban and rural students

Region	Students in region (percent)			
	Non-traditional		Traditional	
	Urban	Rural	Urban	Rural
South	29.0	31.1	33.3	54.9
Northeast/North Central	27.2	41.6	34.3	27.0
West	43.8	27.3	32.4	18.1

B. Age Distribution

Women in non-traditional training tended to be older than women in traditional training. Women 20 and under represent considerably more of the Traditional students (60%) than is true for non-traditional (48%).

Additionally, more of the Non-traditional women are in their 20's (34%) than Traditional women (26%), and more women in non-traditional training are 30 years of age and over than are Traditional students, 19% to 15% respectively.

Table III-d. -- Age distribution of students

Age (in years)	Non-traditional	Traditional
20 and under ***	48.1	59.5
21 - 29 years	33.5	25.9
30 years and over**	18.5	14.6

If the urban/rural distribution of women is taken into consideration, the implications of the age of the women becomes even more complex. Of the women in urban areas, 43% in non-traditional training are 20 years of age and under compared to 63% in traditional training.

Table III-e. -- Age distribution of students by urban/rural location

Age (in years)	Location (percent)			
	Non-traditional		Traditional	
	Urban	Rural	Urban	Rural
20 years and under	43.4[a]	62.4[b]	63.1[a]	52.2[b]
21 - 29 years	35.4[c]	27.4	23.7[c]	30.2
30 years and over	21.2	10.2	13.1	17.6

Nt x^{2***}, Trad x^{2***}

a^{***}, b^{*}, c^{***}

This situation is reversed in the rural areas where 52% of the Traditional students are 20 and under, but 62% of the Non-traditional students are in that age group. A similar reversal occurs among those women 30 years of age and older. Thus, although in the overall sample the Non-traditional students are older, a comparison of age distribution by urban/rural areas reveals that Non-traditional women are older in urban areas than Traditional women, but Non-traditional women are younger than Traditional women in rural areas.

These data suggest that in rural areas there is a less positive influence to support women entering non-traditional training. The older women in the rural areas, many of whom are re-entering the labor force are

entering training for traditional occupations. Fewer opportunities for older rural women in non-traditional occupations is another factor that may account for the lower proportion of older rural women going into these areas. If this were a factor, it could be hypothesized that more rural older women would go into non-traditional training if more jobs in these fields were available.

C. Race

The difference in the racial distributions of women in traditional and non-traditional occupational training is not significant, although the percentage of Minority women is slightly larger in the non-traditional sample than in the traditional sample. Minority women made up about 15% of women in non-traditional and traditional training--10% were Black, 2-3% were Hispanic, 1-2% were Asian or Pacific Islander and 1% were American Indian or Alaska Native.

Table III-f. -- Racial/ethnic distribution of students

Racial/ ethnic group	Students (percent)	
	Non-traditional	Traditional
White	84.8	86.7
Minority	15.2	13.3
Black	9.9	9.5

As in the total sample, more Minority Non-traditional women than Minority Traditional women lived in urban areas (85% compared to 79%, respectively). A higher proportion of Black Traditional women (36%) were from rural areas than were Black Non-traditional women (10%). (See Table III-6). Since most of the rural Black population in the United States is in the South, we can assume that a high percentage of the women in traditional training in rural areas of the South would also be Black.

D. Characteristics of Parents

Fathers

There is little difference between Non-traditional and Traditional students as far as the occupations of their fathers are concerned. (See Table III-7). The only statistically significant difference is the percentage of fathers who are professionals. Sixteen percent of the fathers of Non-traditional women are professionals compared to 11% of the fathers of Traditional women. At the same time, however, the fathers of Non-traditional women tended to have less education than the fathers of Traditional women. Twenty-four percent of the fathers of Non-traditional

students had 8 years of education or less. (See Table III-8.) This seeming contradiction of greater percentage of professionals and lesser educational background among Non-traditionals fathers can be attributed to the generally older age of the Non-traditional students and their fathers. The level of education has steadily risen in this country and fathers of older students, whether those students are Traditionals or Non-traditionals, will tend to have had less education. Since there are more older women among the Non-traditionals, we can expect that more of the fathers of Non-traditional women will have low educational attainment.

Mothers

Studies of women in college and the professions have shown that the characteristics of the women's mothers, in terms of their employment characteristics and education, are related to their daughters choices of traditional or non-traditional careers. The relationship is apparently not a direct one, however, in the case of women in postsecondary vocational education. As in the case of fathers, the characteristics of mothers of Non-traditional and Traditional women in the sample varied little. Forty-six percent of Non-traditional students mothers and 50% of Traditional students mothers were working, a minor difference that was not statistically significant. (See Table III-9).

Examination by other variables reveals nothing more than minor variations in the characteristics of the mothers of Traditional and Non-traditional women. For example, more Traditional womens mothers than Non-traditional womens mothers never worked 4 percentage difference. Among students who are 20 years of age or more, more mothers of Non-traditional women worked 15 years or more (see Table III-10); differences ranged from 4-9 percentage points. Finally, an examination of the occupational distribution of working mothers educational characteristics revealed no significant differences, whether their daughters were in traditional or non-traditional training programs. (See Tables III-11 and III-12.)

E. Income

Forty percent of the household incomes of Non-traditional women were in the middle income range of $5,000 to $15,000 compared to 49% of the Traditional women. (See Table III-g at top of next page.) The Non-traditional women were represented slightly more in the low household income ($0-5,000) and the high household income ($15,001 and over) than were the Traditional women. The differences were 4 percentage points for low income and 5 percentage points for the higher income.

Table III-g. -- Household income of students

Household income (annual)	Student response (percent)	
	Non-traditional	Traditional
$0-5,000	15.9	12.0
$5,001-15,000**	40.2	48.8
$15,001 or higher	43.8	39.3

x^2 **

F. Summary

The most striking contrasts in demographic data between the Non-traditional and Traditional students were found in their differing age distributions and their urban/rural distributions. Non-traditional women were more likely to be urban and older than Traditional women. The smaller percentage of Non-traditional rural women suggests that special efforts are needed to improve the balance. Other variables, such as parental employment characteristics and family incomes were also tested, but no significant differences were discovered.

IV. Educational Personnel

In the second stage of our project, a sample of educational personnel was surveyed. These persons had been named by Non-traditional women as having been very influential in their decision to enroll in training for a non-traditional occupation. Only 26% (224) of the Non-traditional students named any educational personnel as being very influential; 166 of these persons responded to our survey.

The purpose of the educational personnel survey was to acquire information about the materials, programs, and counseling methods which the educators had successfully used to encourage women to enter non-traditional training. Questions were asked about the educational personnel's positions and demographic characteristics in order to obtain a profile of those educational personnel who had been able to influence women to enroll in non-traditional programs. Personnel were also asked to identify characteristics of women whom they thought might consider enrolling in non-traditional occupations, and to indicate how many such women were enrolled in their schools. Educational personnel were also asked questions that matched those for the students concerning the usefulness of particular counseling techniques, persons who were influential, and the motivations of women entering non-traditional occupations. 1/ (See Table VI-a.)

A. Educational Personnel Demography

In developing the educational personnel survey, it was expected that most of the persons identified by students as being influential would be women and counselors. However, educational personnel who were identified as being influential were predominantly men and predominantly teachers. Of the 166 educational personnel who responded to our questionnaire, 2.5 times as many were teachers as counselors, over 3 times as many were men as women, and a slightly larger number were postsecondary school personnel (88) than were secondary school personnel (78).

Table IV-a. -- Characteristics of the educational personnel

Educational personnel	Men	Women	Total
Secondary	53	25	78
Counselors	17	11	28
Teachers	32	11	50
Others	4	3	
Postsecondary	74	14	88
Counselors	11	6	17
Teachers	59	6	71
Others	4	2	
TOTAL	127	39	166

1/ Educators responses to these matching questions are analyzed along with those of the students in relevant sections throughout the report.

With the large percentage of the Non-traditional sample being 21 years of age and older (52%), it is not unexpected that a larger percentage of the Influentials among the school personnel are from the postsecondary schools. No educational personnel at the junior high school level are in the sample, and only four were named by students as having been very influential.

The racial distribution of the educational personnel was 158 White, 3 Black, and one each of Hispanic, Asian American, and American Indian heritage. (See Table IV-2.) The percentage of Minorities among educational personnel was significantly lower than the percentage of Minorities among Non-traditional students.

The teachers who were identified by Non-traditional students were predominantly men and were teachers of vocational education at both the secondary (63%) and postsecondary (92%) levels. The few women teachers who were identified included three who taught women's studies, two who taught physical education and one who taught home economics. (See Table IV-3.)

Almost half (49%) of the personnel have been in the educational system for 10 years or longer, and nearly two-thirds (64%) have been in their present position for more than five years. (See Table IV-4.) Apparently, where an impact is being made, it is usually being made by an experienced and established educator.

The educational personnel are also well prepared academically, 64% hold Masters Degrees and another 8% hold Ph.Ds. Even among the secondary school personnel, 60% have Masters Degrees and 4% have Ph.Ds. (See Table IV-5.)

The regional distribution of the educational personnel was similar to that of the student sample, a good indication that in no region of the country are educators any more or less responsive to the need to encourage women to enter non-traditional training than any other. Thirty-eight percent of the educational personnel were from the West, 37% were from the Northeast/North Central (NE/NC), and 25% were from the South. (See Table IV-6.) All of the regions have virtually the same ratio of men to women educators (76% to 24%). NE/NC has a higher percentage of responses from secondary schools (61%) compared to the South (42%) and the West (37%). The smallest percentage of counselors was from the South (17%), compared to the West (27%) and NE/NC (34%).

B. Characteristics and Encouragement of Non-traditional Students

The educational personnel were asked to list the qualities or skills that they felt a woman needs to be successful in non-traditional vocational training which are <u>different</u> from those that a woman needs to be successful in traditional training. The following is a list of their responses:

Table IV-b. -- Qualities or skills women need to be successful in non-traditional training (which are different from those needed for traditional training) as defined by the educational personnel

Qualities or skills	Number of times mentioned
1. Determination and assertiveness	69
2. Emotional maturity and sense of humor	62
3. Aptitude and interests	57
4. Self-confidence	56
5. Mechanical skills	41
6. Independence	30
7. Intelligence	27
8. Physical abilities/strength	23
9. Ability to do a man's work	20
10. Perseverance	20
11. Adaptability	15
12. Good training	12
13. Math skills	11
14. Ability to get along with men	10
15. Ability to work hard	10
16. No difference than for other students	9
17. Patience	7
18. Ability to remain feminine	7
19. Strong support (home, peers, etc.)	6
20. Other	27

There were no significant differences in the lists of characteristics by men or women school personnel, by teachers or counselors and by secondary or postsecondary personnel.

Some of the educators responses, contrast with students own observations. The need for strong support, which seemed well substantiated based on responses by the students and the educators themselves elsewhere in this report (See Chapter V, Influentials), was listed only 6 times. Math skills, which were important in determining whether the students perceived that their high schools had adequately prepared them for their postsecondary education, were mentioned only 11 times by the educators. (See Chapter VII, Relevance of High School Preparation.) On the other hand, other responses confirm observations made elsewhere in the report. Both students and educational personnel had indicated that aptitudes and interests were the most important motivating factors for women to select non-traditional occupations (See Chapter VIII, Motivational Factors) and here it has been defined as one of the most important characteristics for women going into non-traditional training. The presence of mechanical skills is mentioned almost equally as often; this might be equivalent to the students indication of their strong need for more background in technical subjects. (See Chapter IX, Problems and Difficulties of Non-traditional Students.)

Many of the characteristics listed by the educational personnel cannot be matched with student responses. The importance that the educators put on such characteristics as determination and assertiveness, self-confidence, ability to get along with men, and perserverance, are the common stereotypes of the qualities that women must have to "make it in a man's world."

As we noted already, the educational personnel were asked to define qualities and/or skills necessary for a woman to succeed in non-traditional training, which are <u>different</u> from those necessary for women to succeed in traditional training. It is surprising that among the characteristics which educational personnel identified as necessary for Non-traditional women students to succeed that <u>differed</u> from what a traditional woman student needed to succeed were emotional maturity, intelligence and independence.

Educational personnel felt that there were comparatively few women in their schools over the past five years who should have been encouraged to enter non-traditional training. A majority of personnel indicated that they

Table IV-c. -- Number of women students encouraged by personnel to train for a non-traditional occupation

Number encouraged	Response (percent)	
	All educational personnel	Counselors
0 - 19	41.5	21.2
20 - 49	25.2	39.4
50 - 99	17.0	24.2
100 or more	16.3	15.2

had encouraged fewer than 50 women in their schools in the past five years to enter non-traditional training; and that less than 50% of the women who had been so encouraged followed the advice.

Table IV-d. -- Estimated percent of women following advice to train for non-traditional occupations

Percent following advice	Response (percent)	
	All educational personnel	Counselors
0-19 percent	12.0	31.0
20-49 percent	43.6	31.0
50-79 percent	33.3	34.5
80 percent or more	11.1	3.4

Counselors felt that they had encouraged more women to enter non-traditional training. (Seventy-nine percent of the counselors compared to 59% of all educational personnel had encouraged more than 20 women to enter non-traditional training.)

However, the counselors' perception of their success ratio was slightly less than the perceptions of all educational personnel. Only 38% of the counselors believed that 50% or more of the women had taken their advice, compared to 44% of all educational personnel who believed 50% or more of the women had taken their advice.

There were only slight differences in their perception of the number of women who should have been encouraged to enter non-traditional training.

Less than half (46%) of the educators felt that there had been 100 or more other women students in their classes in the last five years who should have been encouraged to participate in non-traditional training. More than half (55%) of the educators who were women, however, felt that there had been 100 or more other women students who should have been encouraged.

Table IV-e. -- Number of additional women students who should be encouraged to enter training for a non-traditional occupation (opinions of educational personnel)

Number who should be encouraged	Response of educational personnel (percent)		
	Total	Women personnel	Counselors
0 - 19	21.2	10.0	19.2
20 - 49	23.5	35.0	26.9
50 - 99	9.4	0.0	15.4
100 - 199	23.5	25.0	15.4
200 or more	22.4	30.0	23.1

Data support the educational personnel's pessimistic view of the number of women who might have been encouraged. Only 9% of all women in vocational training are presently enrolled in non-traditional programs, and elsewhere in this report (See Chapter XI, Alternative Occupations) we find that only 12% of the Traditional and 16% of the Mixed women seriously considered a non-traditional occupation as an alternative.

C. Initiators of Women Students Entry into Non-traditional Training

The educational personnel, when asked who first initiates the idea of a woman entering training for a non-traditional occupation, responded most frequently that the student herself generally initiated the idea (64%). (See Table IV-f on the following page.) The next highest responses were that teachers (36%) and counselors (28%) first initiate the idea of women training for a non-traditional occupation. Parents (9%) and peers (12%) were not viewed by a large percentage of the educational personnel as initiators.

Table IV-f. -- Initiators of idea of women training for non-traditional occupations

Initiators	Responses of educational personnel 1/	
	Percent	Number
Teacher	35.6	58
Counselor	27.6	45
Other school personnel	4.3	7
Parents	9.2	15
Peers	12.3	20
Student herself	63.8	104
Others	5.5	9
Don't know	7.4	12

1/ Several identified more than one person.

In addition to the students themselves, the teachers and counselors identified the following as initiators:

Table IV-g. -- Initiators of idea of women training for non-traditional occupation, by position of educational personnel (opinions of educational personnel)

Initiators	Respondents (percent)	
	Teachers	Counselors
Teachers	39.5	25.0
Counselors	19.3	50.0
Other school personnel	5.0	2.3
Parents	10.1	6.8
Peers	11.8	13.6
Others	5.0	6.8

Of importance is the fact that 40% of the teachers believe that teachers are initiators, and 50% of the counselors think the counselors are initiators. Only 10% of the teachers and 7% of the counselors selected the parents.

Although the teachers thought that teachers and counselors thought that counselors were the most important initiators after the students themselves, in responding to another question on who was influential, a higher percentage of teachers and counselors indicated that women counselors were influential in helping women decide to train for non-traditional occupations than they indicated for any other school personnel. Second highest of school influentials, in their perception, were women teachers, and third, men counselors. (See Chapter V, Persons Influencing Decision-Making.) The irony is that those who were named by the students as the school personnel who were very influential in their decision to enter non-traditional training--men

and teachers--expected overwhelmingly that women counselors would carry the majority of the responsibility for influencing students, no matter who initiates the idea in the first place.

D. Programs and Materials Utilized by Educational Personnel

The educational personnel respondents indicated that they receive little assistance in establishing guidance programs from their schools; 56% of all personnel indicated that the school had not developed a program to assist women, but had left it up to individual teachers and counselors to respond as the need occurred. They had few programs or materials to recommend to other persons attempting to assist women in career decision-making.

Table IV-h. -- School policy on programs for encouraging women to consider training for non-traditional occupations

School policy (percent)	Total	Counselors	Teachers and other personnel
	(percent)		
Developed own program	23.2	22.7	23.4
Used program developed elsewhere	2.6	2.3	2.7
Allowed individual teachers & counselors to develop own program	18.1	27.3	14.4
Left it up to teachers & counselors to develop own program	56.1	47.7	59.5

Few had any advice to give, references to offer, or programs to suggest. When asked if they would use materials developed elsewhere if funds were available, 57% responded that they would not be interested in other material. One can only assume, since these educational personnel who

Table IV-i. -- Use of resource materials if funds were available

Educational personnel	Would use other resource materials (percent)	
	Yes	No
TOTAL	42.9	57.1
Counselors	56.0	44.0
Teachers and others	38.4	61.6
Secondary	42.9	57.1
Postsecondary	42.9	57.1
Men	40.3	59.7
Women	52.4	47.6

had been very influential to women training for non-traditional occupations expressed so little interest in obtaining additional material, that the educational personnel who presumably were less concerned with the issue (74% of the students named no school personnel as very influential) would not be likely to express any greater interest in obtaining additional material.

V. Persons Influencing Decision-Making

Students in the sample were given a list of several categories of persons who might have influenced them in their choice of occupational training. This list (hereafter called the "influentials") included school personnel who were classified by level of school, title, and sex, and non-school persons who were classified by relationship to the student and sex. Each woman was asked to indicate whether each person was very important, somewhat important, or not important in her decision to enroll in her present program. (See Questionnaire in Appendix).

A. Non-School Influentials

Of all persons listed, adults within the students immediate family were the most influential. School personnel were mentioned only half as often as members of the immediate family. Mothers were mentioned most often by both Traditional and Non-traditional women, but 73% of the Traditional women and only 50% of the Non-traditional women mentioned their mothers as influential in their decision-making. Fathers were the next most often mentioned, but again they were more influential to Traditional students (56%) than to Non-traditional students (44%).

Table V-a. -- Importance of family and friends in students selection of training

Persons	Students considering person important (percent)	
	Non-traditional	Traditional
Mother***	50.3[a]	72.8[b]
Father***	44.3[a]	56.2[b]
Husband**	46.0	58.2
Men friends	43.1	39.7[c]
Women friends***	44.1	54.7[c]
Men relatives	25.5	23.3[d]
Women relatives***	24.1	38.7[d]

a^{*}, b^{***}, c^{***}, d^{***}

Women responding to the question of husbands influence indicated that their husbands were important influences as often as they did their fathers. Of all Non-traditional women, 44% said their fathers were important influences and 46% said their husbands were important influences. Among Traditional students, 56% said their fathers were important influences, and 58% said their husbands were important influences.

For Non-traditional women, men and women friends were both almost as influential as their parents. Forty-three percent of the Non-traditional

women felt men friends had been an important influence, and 44% felt women friends had been an important influence. For Traditional women, on the other hand, only women friends were nearly as important as parents in influence. Traditional women tended to find women friends (55%) far more influential than men friends (40%).

Mothers Influence

The characteristics of parents are often associated with students attitudes and decisions. The employment and educational characteristics of mothers of students in postsecondary vocational training are a key variable in determining the degree of mothers influence on students career choices. The data do not explain, however, why students chose the specific occupations that they did.

As the data in the Demography chapter indicate, there are no significant differences between the employment characteristics of mothers of Non-traditional students and the employment characteristics of mothers of Traditional students. These factors do not in and of themselves influence a young woman's decision to select non-traditional occupational training over traditional occupational training. Employment characteristics, however, do affect how influential the mother was in her daughter's occupational decision-making. The data also show, clearly, that more daughters who enrolled in traditional training programs had received positive assistance from their mothers than daughters who enrolled in non-traditional training programs received, regardless of the employment characteristics of the mothers.

In the case of both Non-traditional and Traditional students, mothers who worked were influential more often than mothers who did not work. Mothers who had worked a short period of time (less than 5 years) were more influential than mothers who had worked longer (5 or more years).

Table V-b. -- Importance of students mother in influencing choice of training, by mothers employment characteristics

Mothers employment characteristics	Students responding mother is important (percent)	
	Non-traditional	Traditional
Mother works***	53.5[a]	78.8[b]
Mother does not work***	46.4[a]	68.1[b]
Mother never worked***	42.6[c]	63.6[d]
Mother worked at any time***	52.6	75.9
Worked less than 5 years***	60.0	83.0
Worked 5 years or more***	50.9	74.1

a^{*}, b^{**}, c^{*}, d^{**}

One may speculate that the reason for the greater influence of mothers who worked five years or less is that they may also have recently under-

gone the experience of choosing an occupation, an experience in which the daughters were able to share and with which they could identify.

The likelihood that a mother is influential is also related to her education. Mothers with a college degree are more likely to have been an influence on students who chose a non-traditional training program than mothers with less education.

Table V-c. -- Mothers education and mothers influence on students selection of training

Mothers education (years of school completed)	Students responding mother was influential in selection of training (percent)	
	Non-traditional	Traditional
0 - 8 years	42.9[a]	53.3[b]
9 - 11 years **	50.0	69.9
12 years ***	48.6	75.7
13 - 15 years***	53.4	80.4
16 year or more*	60.8[a]	78.6[b]

a^{*}, b^{**}

More mothers with 13 or more years of school were an influence to both Traditional and Non-traditional students while mothers with 8 or less years of education were least likely to influence their daughters.

Father's Influence

The relationship of parents education and parents influence is not as clear for fathers as it is for mothers. As with the mothers, the demographic characteristics of Non-traditional and Traditional students fathers are similar, and therefore,not a significant variable determining whether students choose non-traditional or traditional occupational training programs.

As we have seen, the more education a mother had, the more likely she is to have been an influential person in her daughter's choice of training programs. Among Traditional students, the same relationship generally existed between the amount of education a father had, and his degree of influence. The situation for fathers of Non-traditional students, however is different. The number of fathers who are influential increased with education ranging from the 35% of fathers with 0-8 years of education who

Table V-d. -- Fathers education and fathers influence on students selection of training

Fathers education (years of school completed)	Students responding father was influential in selection of training (percent)	
	Non-traditional	Traditional
0 - 8 years	34.8[a]	45.5
9 - 11 years*	41.8	57.9
12 years	52.4[a]	55.7
13 - 15 years	44.9	56.3[b]
16 years or more***	48.7	71.4[b]

Nt x^{2}**, Trad x^{2}**
a***, b*

were influential to the 52% of fathers who were high school graduates who were influential. The percentage of college educated fathers who were influential (49%) was lower, however, than the proportion of fathers with only a high school education. This contrasts with Traditional women for whom college educated fathers tended to be more influential than fathers with only a high school degree. A closer look at fathers' occupations helps to explain this apparent discrepancy.

For purposes of analysis, the occupations of the women's fathers were classified into high status white collar (professional and technical jobs), low status white collar (sales and clerical jobs), high status blue collar (skilled occupations) and low status blue collar (service jobs and semi-skilled and low-skilled jobs).

Among Non-traditional students, more fathers employed in high status blue collar jobs (47%) and high status white collar jobs (50%) had been influential than fathers employed in low status white collar jobs (38%) or in low status blue collar jobs (38%). These findings are to be ex-

Table V-e. -- Fathers occupational status and fathers influence on students selection of training

Fathers occupational status	Students responding father was influential in selection of training (percent)	
	Non-traditional	Traditional
High status white collar**	50.0	64.1ø
Low status white collar	38.3	50.9
High status blue collar*	46.6	57.8
Low status blue collar**	37.9	53.3
Agriculture	53.2	50.0

Nt x^{2} *
ø*

pected. Non-traditional vocational education programs are preparing students for technical and skilled occupations, which are high status white collar and high status blue collar jobs. Fathers employed in such occupations will have considerable knowledge about these occupations, and thus be in a better position to influence daughters who are going into non-traditional occupations than would fathers who are employed in low status white collar and low status blue collar jobs.

This examination of fathers influence by occupation and education also explains the greater influence for Non-traditional women of fathers who had completed high school but were not college graduates. While fathers employed in professional and managerial occupations are likely to be college graduates, fathers in technical and skilled occupations are likely to have only completed high school or have some college.

Based on the above findings, parents apparently provide support and encouragement, but do not actually participate in the decision of whether their daughters pursue non-traditional or traditional occupations. Parents, it would appear, influence their daughters by stimulating their daughters interest in occupational areas in which the parents themselves were educated and/or employed. On the other hand, parents probably tend not to suggest particular occupations for their daughters as counselors would. Parents might stimulate a daughter's interest in science, for example, but her own choice of occupations may range from a nurse (traditional) to an oceanographic technician (non-traditional).

The parents have been influential because they shared an interest area with their daughters, but they have not necessarily influenced their daughters to enter a particular traditional or non-traditional occupation. Unless an effort is made to make parents aware of the broad range of occupational areas available to their daughters, their influence in women's decision-making will be constrained by the limitations of their own experiences. Not only were some parents not influential to women who had selected non-traditional occupations, but some parents actively discouraged such a choice. Nine percent of Non-traditional women's mothers and 8% of Non-traditional women's fathers had discouraged them from selecting non-traditional training. This percentage was more than twice that of parents of Traditional students (3% of mothers and 4% of fathers) who had discouraged their daughters in their selection of training programs. (See Table V-1.)

Age of Student

The age of the student is an important factor in the degree to which parents are an influence on daughters selections of training areas. Mothers and fathers tended to be more influential for the younger students in the sample. However, the percentage difference in influence by age is not as great as the overall difference in parental influence between Traditional and Non-traditional students.

Table V-f. -- Influence of parents on students selection of training, by student age

Student age	Mother			Father	
	Percent responding parent was important				
	Non-traditional	Traditional		Non-traditional	Traditional
17-19 years	66.2	82.5[a]		60.6	63.7[a]
20 years	64.5	79.7[b]		56.7	65.8[b]
21-24 years	54.7	74.1[c]		46.2	56.7[c]
25-29 years	32.3	72.0	***	32.3	60.0
30 years and over	23.5	35.6[d]		17.4	19.5[d]
	Nt x^{2***}, Trad x^{2***}			Nt x^{2***}, Trad x^{2***}	

a^{***}, b^{*}, c^{**}, d^{*}

There appears to be a difference between Traditional and Non-traditional women in the age group at which parental influence drops. Parental influence seems to decrease markedly among Non-traditional women who are 25 and over while parental influence does not seem to decrease for Traditional women until they are 30 and over.

Patterns of Influence

For both Non-traditional and Traditional students, non-school persons were more influential than school persons, and, among non-school persons, immediate family was the most influential. Additionally, for most categories of non-school influentials (except men friends and relatives) proportionately more Traditional than Non-traditional students indicated each category of influentials was important in their decision-making. (See Table V-1.) Mothers, fathers, husbands (of those responding), and women friends (73%, 56%, 58%, and 55%) were important influences to proportionately more Traditional women than to Non-traditional women (50%, 44%, 46%, and 44%).

There are also differences in the patterning among these responses. For example, the differential between mothers and fathers is much greater for Traditional students than for Non-traditional students. The differential between the influence of men and women friends and men and women relatives is very slight for Non-traditional students. However, for Traditional students, women friends (55%) and relatives (39%) are much more influential than their men counterparts (40% and 23%).

It is important in examining the career decision-making and in designing mechanisms for support and assistance for women in vocational training to consider that there is little difference between the importance of men and women influentials for Non-traditional students, and substantially more influence from other women than from men for Traditional students. These patterns will be shown, subsequently, to be different among school personnel.

B. School Personnel Influentials

The percentage of Non-traditional women who indicate that school personnel had an important influence on their decision to select their present training (24%) is about one-half the percentage of those who mention parents as influential in their decision (48%). For Non-traditional women the largest group of non-school persons was mothers, listed by 50% of the women; the largest group of school personnel named was men postsecondary school teachers at 32%. For Traditional women, the largest number of non-school persons was their mothers (73%), and the largest number of school personnel was women secondary school teachers (38%).

Table V-g. -- Importance of school personnel in students' selection of training

School level and personnel	Students considering person somewhat or very important (percent)				
	Teachers			Counselors	
	Non-traditional	Traditional		Non-Traditional	Traditional
Junior high school					
Men*	6.0	9.3		5.1	6.7
Women***	6.3	11.1	**	4.5	8.3
Senior high school					
Men*	24.9[a]	28.8[b]	***	18.8	26.3
Women***	17.7[a]	38.2[b]	***	16.2	30.2
Postsecondary					
Men***	31.9[c]	23.4[d]		24.8[e]	22.4
Women***	17.6[c]	33.8[d]	***	15.2[e]	26.5

a^{***}, b^{***}, c^{***}, d^{***}, e^{***}

The percentage of women in the sample who were influenced by any school personnel is higher for Traditional (64%) than for Non-traditional (57%) students. 1/

1/ For the following analysis, data were grouped by whether a student responded positively to any one of a number of categories of school personnel. For example, women counselors includes those employed at junior high, senior high or postsecondary schools. If the student marked a positive response (very important or somewhat important) for any one or more of these persons, women counselors would be tabulated as influential for that student. Likewise, a positive response for "Teachers" would mean that the student marked at least one teacher--man or woman, junior high, senior high or postsecondary.

Table V-h. -- School personnel influence on students' selection of training, by school level of personnel

Groups of school personnel	Students responding one or more persons in the group was influential (percent)	
	Non-traditional	Traditional
Any school personnel***	56.5	63.9
Senior high school personnel***	34.7[a]	50.8[b]
Postsecondary personnel	42.8[a]	43.3[b]

[a]***, [b]**

For Non-traditional women, postsecondary school personnel were named more often (43%) than senior high personnel (35%). For Traditional women, the reverse is true, senior high school personnel influence more women (51%) than postsecondary school personnel (43%). However, postsecondary school personnel influence virtually the same percentage of Non-traditional and Traditional women (43%). Junior high school personnel were named only rarely, by either Non-traditionals or Traditionals, even by the younger women.

Age of Women Students

Since age was related to parental influence it was also expected to be related to school personnel influence. Among students 17-19 years of age, Traditional women mentioned school personnel as important (80%) more often than Non-traditional women (73%). However, for both

Table V-i. -- School personnel influence on student selection of training, by age of student

Student age	Students responding one or more school personnel were influential (percent)	
	Non-traditional	Traditional
17-19 years*	72.9	80.3
20 years	63.5	64.6
21-24 years	58.0	50.0
25-29 years	40.2	50.0
30 years and over	31.5	32.2

Nt x^{2***}, Trad x^{2***}

Non-traditional and Traditional students the number of school personnel named by older women is much less frequent with only 32% of older women finding any school personnel influential. The number who are influenced drops consistently for both Traditional and Non-traditional women, but

the relative number who are influenced swings erratically from Traditional to Non-traditional. Clearly Non-traditional women can be influenced by educational personnel, indicating the possibility of a successful outcome if special programs are established.

Teachers and Counselors

Traditional students mentioned that teachers were influential (56%) more often than counselors (50%). Non-traditionals had a similar view; the percentage difference is small (46% to 41%). This difference between the influence of teachers and the influence of counselors holds for school personnel at each of the three school levels: junior high, senior high, and postsecondary school. (See Table V-g.)

Table V-j. -- Influence of teachers and counselors on student selection of training

School personnel grouped by position	Students responding one or more persons in the group were influential (percent)	
	Non-traditional	Traditional
Counselors***	41.3[a]	50.3[b]
Teachers***	46.0[a]	56.0[b]

a^*, b^*

It is important to remember that a large percentage of all the teachers who influenced Non-traditional students are vocational education teachers. (63% of all senior high school teachers and 92% of all postsecondary teachers in our educational personnel sample were male vocational education teachers. See Chapter IV--Educational Personnel.) Teachers can only influence students who have already made at least a tentative career decision by enrolling in a non-traditional class. One might describe the "influence" of their teachers as providing support and encouragement rather than influencing the preliminary career decision. We can assume that many entered their non-traditional course mostly on their own, since few gave credit to counselors who personally schedule their courses, and were fortunate to have found a vocational teacher who encouraged them. This, however, cannot be interpreted as Non-traditional women having received assistance in career decision-making.

The relative influence of teachers and counselors is not the same for all age groups. More Non-traditional women aged 17-24 are influenced

by teachers than by counselors. However, for the older women 25 years of age and older the importance of the teachers is reduced to a level

Table V-k. -- Influence of teachers and counselors on student selection of training, by student age

Age of students	Students responding one or more persons in the group were influential (percent)			
	Counselors		Teachers	
	Non-traditional	Tradi-tioral	Non-traditional	Tradi-tional
17-19 years*	56.3[a]	64.6	64.4[a]	70.1
20 years	45.2	48.1	52.9	59.5
21-24 years	39.2	42.3	46.9	45.2
25-29 years	30.7	44.0	29.9	44.0
30 years and over	22.1	18.4	18.8	24.1
	Nt x^{2***}, Trad x^{2***}		Nt x^{2***}, Trad x^{2***}	

[a]*

similar to that of the counselors. For Non-traditional women over 30, the percentage who are influenced by any school personnel is small. These women may need little assistance in decision-making either from teachers or from counselors, since they probably have decided what their strong interests are, and have returned to school to translate their interest into skills, and subsequently, to a job.

School Personnel by Sex

Non-traditional students named men school personnel (51%) more often than women (37%); the only level where Non-traditional students named women more often than men was at the junior high school level, and that by a fraction of a percent. In all cases, Traditional students named women school persons as influential (58%) more often than men (49%).

Table V-l. -- Influence of men and women school personnel on student choice of training

School personnel grouped by sex	Students considering one or more persons in the group influential (percent)	
	Non-traditional	Traditional
Men	50.7[a]	48.5[b]
Women***	37.1[a]	58.3[b]

[a]***, [b]***

Additionally, for each age group and for teachers and counselors, men are more influential for Non-traditional women, and women personnel are more influential for Traditional women.

Table V-m. -- Influence of men and women teachers and counselors on student selection of training, by student age

Student age	Students considering person influential (percent)			
	Non-traditional		Traditional	
	Teachers	Counselors	Teachers	Counselors
17 - 19 years				
Men	57.7[a]	46.8[a]	49.6	47.1
Women	41.2[c]	35.6[d]	65.0[b,c]	52.9[b,d]
20 years				
Men	51.9[e]	37.5[e]	41.8	34.2
Women	26.9[f]	26.9[g]	55.7[f]	41.8[g]
21 - 24 years				
Men	41.3	34.3	33.7	31.7
Women	25.9[h]	23.8[i]	42.3[h]	38.5[i]
25 - 29 years				
Men	26.8	24.4	36.0	34.0
Women	15.0[j]	22.8	38.0[j]	36.0
30 years or more				
Men	16.8	16.1	16.1	11.5
Women	12.8	11.4	18.4	14.9
Men	x^{2***}	x^{2***}	x^{2***}	x^{2***}
Women	x^{2***}	x^{2***}	x^{2***}	x^{2***}

[a]**, [b]**, [c]***, [d]***, [e]*, [f]***, [g]*, [h]**, [i]*, [j]***

Further, Non-traditional women mentioned male teachers more often than male counselors and Traditional women named female teachers more often than female counselors. Non-traditional women indicated little difference between female counselors and teachers, and Traditional women indicated little difference between male teachers and counselors.

It is likely that this result emerged from students seeking aid from those whom they perceive to be the most knowledgeable about their field of interest. Or more simply stated, more Non-traditional women are exposed to men teachers of non-traditional courses, most of whom are enthusiastic about their trades. The reverse is true for Traditional women. This conclusion is further substantiated for Non-traditional women by the greater difference between men and women teachers (7 percentage points) who are influential at the senior high school level, where men teachers are most likely to be vocational education teachers, than the difference between men and women counselors who are influential (3 percentage points). For Non-traditionals, the contrast between the number of men and women influentials is greatest at the postsecondary level with teachers (14 percentage points difference) and counselors (10 percentage points difference)(See Table V-g).

Although we had hypothesized at the start of this project that the women in the school systems would prove to be helpful to more students considering non-traditional occupations, the results show clearly that this is not what is happening. Women educational personnel are generally sustaining the occupational stereotypes by supporting Traditional women more than any other group of educational personnel. Fewer counselors, and particularly fewer women counselors, have influence. Since the teachers named by Non-traditional students appear to be mainly the teachers in their vocational education classes, and since few non-traditional courses are taught by women, it is not surprising, that few women teachers are influencing Non-traditional women. If we eliminate the influence of the vocational education teacher--either men or women--those school personnel influencing Non-traditional women, are few indeed.

The educational personnel responding were those identified by Non-traditional students as having been very influential in the students selection of training. These personnel were asked, as were the students, to state whether various persons were likely to influence women students to enter non-traditional vocational training. The contrast between the response of the Non-traditional students, and those of the educational personnel are significant.

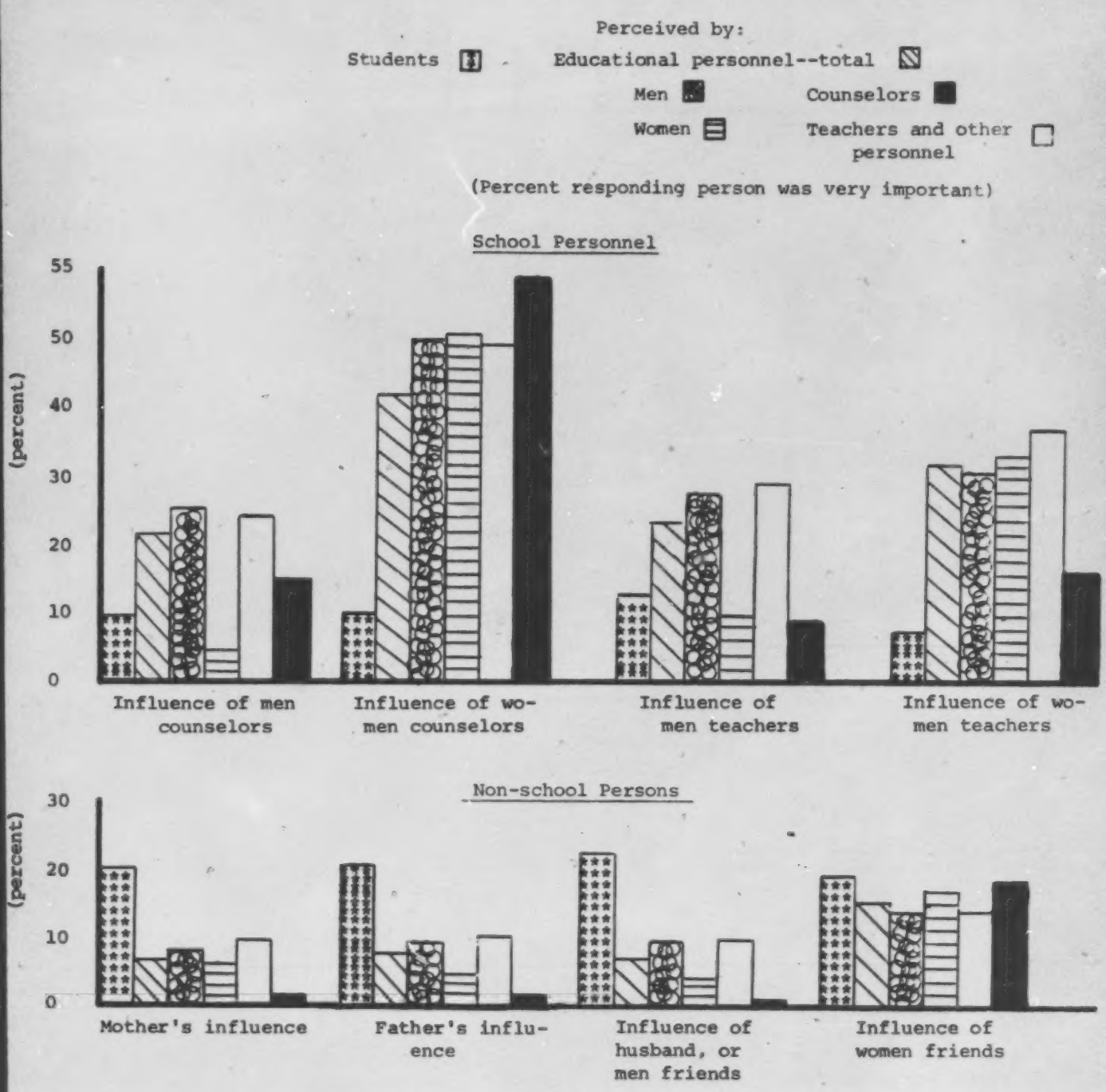
As was stated previously in this section, Non-traditional students responded most often that their mothers were influential, secondly that husbands, fathers, and friends were influential, and least that school personnel were influential in their selection of training. Among school personnel, Non-traditional students found teachers more influential than counselors and men school personnel more influential than women.

The educational personnels perception of who encourage (influence) women to enter non-traditional training differed greatly from that of the students. First, school personnel were thought to be influential more often than non-school persons. Additionally, the total sample of educational personnel perceived counselors as more influential than teachers, and women counselors and women teachers more influential than men counselors and teachers. Each of the major relationships perceived as influential by students were reversed in the perceptions of the educational personnel. (See Chart I, next page.)

Women educational personnel view women counselors as most influential (50%) and women teachers next (32%). Women friends are listed as a poor third (17%), and men counselors (3%), men teachers (9%) as least encouraging among school personnel. Fathers, men friends and husbands (3%) were perceived as equally low among non-school personnel, with mothers not far ahead (6%). These perceptions may be due to these individual women projecting their own willingness to encourage students into non-traditional training.

Chart I

Influence of school personnel and non-school persons on students selection of non-traditional vocational training, as perceived by students, educational personnel, men and women personnel, counselors, and teachers and other personnel. 1/



1/ See Table V-n; student responses on school personnel influentials are averages where dual responses were elicited.

Table V-n. -- Influential persons to students selecting non-traditional vocational training

Respondents (Percent responding person was very important to student)						
Influential persons	Nontraditional students	Educational Personnel 1/				
		Total	Men	Women	Counselors	Teachers and other school personnel
Mother	19.7	6.6	6.8	5.9	0.0	8.1
Father	18.7	6.6	7.6	3.0	0.0	8.1
Husband (or) Men friends	27.0 17.9	6.9	8.0	3.1	0.0	9.2
Women friends	17.8	14.9	14.3	17.1	17.5	14.0
Men counselors						
High school	7.0	20.9	25.4	3.3	14.6	23.4
Post high school	11.6					
Women counselors						
High school	5.6	42.9	49.6	50.0	53.8	48.1
Post high school	11.6					
Men teachers						
High school	9.3	23.0	27.1	8.8	7.7	27.9
Post high school	16.0					
Women teachers						
High school	5.8	30.7	30.2	32.4	17.5	36.4
Post high school	7.0					

1/ Educational personnel were not asked to distinguish secondary and postsecondary influentials, nor husband from men friends, thus, a single response is recorded for those categories.

The pattern of responses from men educational personnel was similar to that of the women except that more men perceived men counselors and teachers as influential, and more men perceived fathers and husbands as influential than did the women. Again the relationships are reversed from those perceived by the students. Men educational personnel perceived the school personnel as more influential than the non-school persons, and friends as more influential than parents.

Given the lack of perception of school personnel about who influences Non-traditional women, it is little wonder that the increase in the number of women in non-traditional jobs is so slight in spite of the expansion of women who are new entrants to the labor force.

Conclusion

Our conclusion is that parents are most influential among non-school personnel, and by and large unless they have specific relevant information, parents are supporting and encouraging students rather than assisting in the decision-making. Teachers, particularly postsecondary teachers, are the most influential of the school personnel. These teachers enter the picture too late to actually assist in the decision-making, however, and are therefore only providing support and encouragement to the women. The results clearly indicate that by and large counselors have played a relatively small role, and that the only role the vocational teachers could have played was to support the women, once they had made a choice.

We can only conclude that most women are reaching their original decision to enter non-traditional training on their own; therefore, they must be given the widest possible assistance to reach this decision independently. This suggests that there should be more opportunity for women to explore a greater variety of non-traditional occupations, tasks, and courses earlier in their curriculum, perhaps through participation in career education. (See Chapter VI--Counseling Methods and Techniques.)

VI. Impact of Counseling Methods and Techniques

Students in the sample were asked to rate a list of methods and techniques used by schools to assist students in choosing an occupation and a career. At the same time, educational personnel were asked to rate a similar list of methods and techniques by their general usefulness in helping young women who might decide to enroll in non-traditional occupational training. Educational personnel were also asked to rate a list of support techniques that would help students remain and succeed in a non-traditional program after enrollment. 1/ Further, the educational personnel were asked to identify which of the support mechanisms were available in their schools.

In this section the responses of women students and educators about the various techniques and methods available are analyzed and compared. 2/ Table VI-a shows the list of career decision-making and support techniques that they were asked to rate:

Table VI-a. -- Summary of counseling methods and techniques students and educational personnel were asked to rate

Decision-making activities		Support activities
Students	Educational personnel	Educational personnel
Individual counseling	Individual counseling	Individual counseling
Group counseling	Group counseling	Group counseling
• Mixed groups of men and women	• Mixed groups of men and women	• Mixed groups of men and women
• Groups of women	• Groups of women	• Groups of women
Visiting potential job sites	Visiting job sites	
Having representatives from industry visit your class	Having representatives from industry visit your class	Counseling with potential employers
Career education program	Consultation with parents	Securing parental support
Career orientation program	Career education program	
Vocational testing program	Career orientation program	
	Vocational testing program	
		Talking with women who have successfully "made it" in non-traditional jobs

1/ Students were not given a list of supportive techniques to evaluate. Data on their ratings are, therefore, not available.

2/ Since the educational personnel are those who were identified as having been influential for Non-traditional students only, the responses of Non-traditional students are compared with the responses of educational personnel. Responses of Traditional students are compared with those of Non-traditionals, but not with educational personnel.

A. Women Students

When asked which counseling techniques or programs were most important in influencing their choice of training, the women students most often cited individual counseling as very important, followed by job site visits, and career education. Fifty percent of the Non-traditional and 59% of the Traditional women cited individual counseling as important in their decision concerning training. Forty-eight percent of the Non-traditional women and 55% of the Traditional women mentioned job site visits as important; 43% of Non-traditional students and 59% of Traditional students considered career education as an important factor. Group counseling (either with groups of men and women, or with groups of women only) was mentioned least often as an important technique that helped women choose their areas of occupational training.

Table VI-b. -- Importance of methods of counseling and career information programs in assisting selection of training

Program	Non-traditional	Traditional
	Students responding program was important (percent)	
Individual counseling	49.8[a]	59.0[a]
Job site visit	47.6[b]	54.6[b]
Career education	42.7[c]	59.3[c]
Career orientation	35.2[d]	50.5[d]
Vocational testing	34.8	42.8
Industrial representative visit	33.3	37.9
Group counseling (men and women)	20.7	24.2
Group counseling (women only)	18.3	27.6

a^{***}, b^{**}, c^{***}, d^{***}

The points of greatest difference between non-traditional and traditional responses about the usefulness of various career decision-making aids are with career orientation and career education. There is approximately a 16 percentage point difference in both; 35% of Non-traditional women and 51% of Traditional women mentioned career orientation as an important technique, and 43% of Non-traditional women and 59% of Traditional women mentioned career education as an important technique. Other explanations notwithstanding, one possible explanation for this difference is that older women in the sample may be less familiar with these two types of educational programs, and therefore, confused about the terminology. Another cause, however, could be that both programs--career orientation and career education--are encouraging women to participate mainly in the traditional occupations. The high response

to career education and the higher response by Traditional women to its importance warrants further investigation to clarify its usefulness as a tool to eliminate sex bias in career selection by young women.

Interestingly, individual counseling which was the most often cited influential technique was also the one which the highest percentage of students indicated had discouraged them in their career choices. (See Table VI-1.)

Fifty-three percent of Non-traditional women and 38% of Traditional women indicated that few (0-2) of the programs designed to help students choose their careers had actually been important in their own decision-

Table VI-c. -- Quantity of methods indicated as important in choosing training

Number of methods mentioned as important	Non-traditional	Traditional
0 - 2	52.6	38.1
3 - 4	21.7	22.5
5 or more	25.7	39.4

x^2***

making. Traditional women tended to find more types of techniques important to their decision-making than Non-traditional women and a larger proportion of Traditional women than Non-traditional women found each specific technique very important.

B. Minority Women

Analysis of assessments of career decision-making techniques and programs by race and ethnicity indicates that the patterns among Minority and White Non-traditional and Traditional women are similar. One important difference is that the percent of Non-traditional Black and Minority women who find each type of technique useful is higher than the percent of White women who do. (See Table VI-3.)

C. Educational Personnel

1. Support Programs

Three-quarters of all educational personnel stated that there is a need for specific programs to support women in non-traditional training. Ninety-two percent of the counselors at both the secondary and postsecondary level consider such programs important. Ninety-seven percent of the women educators, compared to 67% of men educators viewed support as necessary; 88% of secondary personnel as opposed to 63% of postsecondary personnel viewed such support as essential. (See Table VI-4.)

2. Career Decision-Making Programs

The educational personnel were much more optimistic about the usefulness of programs to assist students with their career decision-making than were the Non-traditional women students. For each of the techniques they were asked to rate, half or more of the students claimed the technique had not been useful to them in their decision-making. Their responses ranged from 50% who felt individual counseling was not useful to 82% who felt group counseling with women only was not useful.

Table VI-d. -- Perceptions of importance of counseling methods and career information programs in assisting student selection of non-traditional training

Program	Persons responding program was not important (percent)	
	Students	Educational personnel
Individual counseling	50.2	2.0
Job site visit	52.5	2.6
Career education	57.3	1.9
Career orientation	64.8	3.2
Group counseling (men and women)	79.3	6.8
Group counseling (women only)	81.8	14.6
Industrial representative visit	66.7	5.2

On the other hand, almost all educators who were surveyed, felt that all the techniques were useful. Women school personnel were more approving of the technique than men. In all cases save one (Industrial Representative), counselors were more positive about the techniques utilized than were other school personnel.

D. Examination of Individual Techniques Utilized for Decision-Making and Support

1. Individual Counseling

Individual counseling was available in 96% of the schools represented by the educators in the sample, while the other techniques were only available at about half of the schools. One may assume then, that nearly all the Non-traditional women students had had access to individual counseling.

The women students' evaluations of individual counseling were analyzed by age to determine if the differing responses by Non-traditional and Traditional women about the technique could be due to the differing age

compositions of women in the two groups. The data show that older students tended to feel that individual counseling was less important than younger students. Only 36% of the Non-traditional women 30 years of age or older responded that individual counseling was somewhat or very important compared to 59% of Non-traditional women 17-19 years old. For Traditionals in comparable age categories, the response rates were 45% and 71% respectively.

Table VI-e. -- Importance of individual counseling in assisting selection of occupational training, by age

Age (in years)	Students responding individual counseling was important (percent)	
	Non-traditional	Traditional
17-19**	58.8	70.5
20	52.9	43.0
21-24	48.3	49.0
25-29**	41.7	68.0
30 years and over	35.6	44.8
Total	49.8	59.0

Nt x^{2***}, Trad x^{2***}

Although for most age groups Traditional women found individual counseling more important than Non-traditional women, among 20 year olds, 53% in non-traditional training programs and only 43% in traditional training programs found individual counseling useful. Among women 21-24 years of age, there were proportionately the same percentage of Non-traditional and Traditional women finding individual counseling a useful technique (48% and 49% respectively).

Individual counseling was considered equally important by the educational personnel for decision-making and support. As might be expected, counselors were particularly positive about the technique. Seventy-five percent of the counselors and 69% of teachers and other school personnel indicated that they felt individual counseling was important for women students who are choosing their careers while 77% of the counselors and 70% of the teachers and other school personnel felt it was important as support for women students after they are enrolled in training

Table VI-f. -- Importance of individual counseling in assisting selection of non-traditional training

Respondents	Importance of individual counseling (percent)					
	As decision-making activity			As support activity		
	Very	Somewhat	Not	Very	Somewhat	Not
Students	25.2	24.5	50.2	--	--	--
Educational personnel	70.5	27.5	2.0	71.7	27.0	1.3
Counselors	75.0	22.7	2.3	76.7	23.3	--
Teachers and other personnel	68.6	29.5	1.9	69.7	28.4	1.8

programs. While the students also considered individual counseling to be the most useful technique, there is a marked difference between their responses and the responses of the educational personnel. Only 25% of the Non-traditional students considered it very important compared to 71% of the school personnel.

The sharp contrast between the students and the educational personnel in their assessments of the usefulness of individual counseling techniques suggests the need for a major re-examination of the counseling system as the primary method to encourage women to enter non-traditional training. Such a re-examination should also take into consideration the findings from this study which show that three out of four (74%) of the educational personnel that Non-traditional students identified as having influenced their career choices were teachers, not counselors. (See Chapter V, Persons Influencing Decision-Making.) Based on the students responses, teachers clearly have influenced women who are training for non-traditional occupations. Few teacher education programs, however, prepare teachers for these roles which they apparently eventually assume--counseling women to enter non-traditional occupational training and/or providing support to them after they have enrolled.

Our study findings show that the counselors have not been successful in influencing most women in their career choices, although this, presumably, is one of the major functions for which they have been trained.

The teachers in the sample also tended to doubt the influence of the counselors. Forty percent of the teachers believed that they, the teachers, initiated the career choice of the students; only 19% of the teachers believed that counselors initiated such choices. (See Chapter VI, Educational Personnel.) Many teachers, however, indicated that this should be an area for which counselors are responsible. A more effective approach which recognizes the critical role that teachers have should be developed to assist women in their choice of careers.

2. Group Counseling

a. For Women Only

Group counseling involving only women is a technique available in less than half (42%) of the schools represented by the educational personnel. The poor rating given by Non-traditional women to this technique may be due in part to the fact that many of the women have not had any personal experiences with it.

Group counseling for women only is not considered as useful as individual counseling for either decision-making or support purposes. However, counselors consider it much more important for decision-making (53% very important) and support (49% very important) than teachers and other educational personnel (35% and 31%). Students, perhaps because they

have not participated in group counseling, do not consider it an important tool; only 18% indicated that it was useful.

Table VI-g. -- Importance of group counseling of women only in assisting selection of non-traditional training and as a support activity

Respondents	Importance of group counseling (women only) (percent)					
	As decision-making activity			As support activity		
	Very	Somewhat	Not	Very	Somewhat	Not
Students	4.4	13.8	81.8			
Educational personnel	39.6	45.8	14.6	36.4	49.5	14.0
Counselors	52.5	42.5	5.0	48.6	45.7	5.7
Teachers and other personnel	34.6	47.1	18.3	30.5	51.4	18.1
Men	33.6	49.6	16.8	31.3	55.0	13.8
Women	61.3	32.3	6.5	51.9	33.3	14.8

School personnel consider it important as a support mechanism and much more important as a factor in decision-making than do the students. Women school personnel (60%) consider it very important as a support mechanism much more than men personnel (31%) or even counselors (49%).

Combining students who indicated that group counseling was very important and somewhat important, Non-traditional women (18%) found it less useful than Traditional women (28%). More Non-traditional women under 30

Table VI-h. -- Importance of group counseling (women only) in assisting selection of occupational training, by age of student

Age (in years)	Students respnding group counseling (women only) was important (percent)	
	Non-traditional	Traditional
17-19***	18.3	30.5
20**	17.3	35.4
21-24	22.4	23.0
25-29	22.8	26.0
30 years and over	11.5ø	16.1ø
Total	18.3	27.6

Nt ø*, Trad ø*

years of age (20%) found it important than women over 30 years of age (12%). Non-traditional women 17-20 (18%) found it much less important than Traditional women of the same age (33%).

As has been noted, students were asked about group counseling as a decision-making mechanism, not as a support mechanism. Only 42% of the schools of the responding educational personnel indicated that group counseling was available in their schools. Information is not available as to how many women students utilized group counseling, particularly as a support mechanism. However, the fact that the class-related problems for Non-traditional women lessen considerably as the number of women in their classes increases (See Chapter IX, Problems and Difficulties) suggests that where there are very few women in the classes, the women in these classes should have access to group counseling sessions with other women in similar situations.

b. Group Counseling for Men and Women

Group counseling of men and women together is available in 52% of the responding schools.

Again, Non-traditional women are less positive about group counseling of men and women together than Traditional women, and women under 30 years of age found it more useful than women 30 years of age and over.

Table VI-i. -- Importance of group counseling of men and women, by age

Age	Percent responding group counseling was important	
	Non-traditional	Traditional
17 - 19 years	22.5	28.0
20 years	20.2	21.5
21 - 24 years	24.5	27.9
25 - 29 years	19.7	24.0
30 years or more	12.1	8.0
Total	20.7	24.2

Trad x^{2} ****

The educational personnel placed a higher value on group counseling involving men and women together than they did on group counseling of only women.

Table VI-j. -- Comparison of counseling groups of women with counseling groups of men and women, as decision-making and support activities

Type of group counseling	Percent responding counseling was very important			
	As decision-making activity		As a support activity	
	Counselors	Teachers and other personnel	Counselors	Teachers and other personnel
Groups of:				
Women only	52.5	34.6	48.6	30.5
Men and women	57.1	46.2	63.4	50.0

Fifty-four percent felt group counseling of men and women was very useful for support, and 49% felt it was very useful for decision-making, while 36% and 40% felt group counseling with only women was useful for support and decision-making. Students made little differentiation between either type of group counseling, nor did they consider either very important for decision-making.

Table VI-k. -- Importance of group counseling of men and women together in assisting selection of non-traditional occupational training and a support activity

Respondents	Importance of group counseling (men and women) -- (percent) --					
	As a decision-making activity			As a support activity		
	Very	Somewhat	Not	Very	Somewhat	Not
Students	5.2	15.5	79.3	--	--	--
All educational personnel	49.3	43.9	6.8	54.1	37.8	8.1
Counselors	57.1	40.5	2.4	63.4	36.6	--
Teachers and other personnel	46.2	45.3	8.5	50.0	38.3	11.7
Men	45.1	47.8	7.1	48.0	43.1	8.8
Women	62.9	31.4	5.7	72.7	21.2	6.1

It is interesting to note that in all cases more counselors and teachers considered group counseling of men and women important than they did group counseling of women alone, and that more counselors considered group counseling important than did teachers and other school personnel.

Clearly, much further study of group counseling in its various forms and for its various purposes is required. More information is needed about the responses of the students who have actually utilized the techniques and the circumstances under which they were utilized. This would help determine the utility of group counseling for increasing women's involvement in non-traditional vocational training and for support of women during such training.

3. Employer Related Decision-Making and Support Techniques

a. Job Site Visitations

As is true with most other techniques, the older women in the sample found job site visitations a less useful technique for helping them choose their field of training than younger women did. Traditional women tended to find it more useful than did Non-traditional women. Compared

to other techniques, however, there is a comparatively smaller drop in perceptions of usefulness among older Non-traditional students.

Table VI-1. -- Importance of visiting job sites in assisting selection of vocational training, by student age

Age	Percent responding visiting job site is important	
	Non-traditional	Traditional
17 - 19 years*	55.6	64.0
20 years	53.9	56.4
21 - 24 years	44.1	49.0
25 - 29 years	42.5	56.0
30 years and over	32.2	27.6
Total	47.6	54.6

Nt x^{2***}, Trad x^{2***}

Job site visitations are generally considered a relatively unimportant counseling tool. It is therefore important to note that as many students (25.8%) considered job site visitations very important as considered individual counseling very important (25.2%). Among Non-traditional students, about the same proportion considered job site visitations and individual counseling either somewhat or very important (48% and 50% respectively). (See Table VI-1.)

This finding would seem to reflect the ineffectiveness of individual counseling, rather than elevate the importance of job site visitations. The comparatively greater cost of individual counseling to the school system and the greater investment of time in individual counseling makes its relative equality to job visitations, in the perception of students, an issue with serious implications which warrants further investigation.

b. Counseling with Potential Employers

Counseling with potential employers is seen by educational personnel as a more important counseling technique for support purposes than job site visitations is for decision-making, especially by teachers and other school personnel. (See Table VI-m.) Counselors felt the two techniques were about equally important. More secondary school personnel (65%) than postsecondary school personnel (54%) considered job site visits important, and postsecondary personnel placed a somewhat higher value on counseling with potential employers (69%) than secondary personnel (62%).

Table VI-m. -- Importance of employer related activities as decision-making and support techniques for students training for non-traditional occupations

Respondents	Importance (percent)					
	Job site visits (decision)			Counseling with potential employer (support)		
	Very	Somewhat	Not	Very	Somewhat	Not
Students	25.8	21.7	52.5			
Educational personnel	59.4	38.1	2.6	65.4	31.5	3.1
Counselors	61.9	38.0	--	58.8	41.2	--
Teachers and other personnel	58.4	38.1	3.5	67.7	28.1	4.2
Secondary	64.9	38.1	--	61.9	36.5	1.6
Postsecondary	53.8	41.0	5.1	68.6	26.8	4.5

c. Industrial Representatives

The importance for career decisions of having industrial representative visits was rated very low by the Non-traditional women students. Only 15% considered it very important; two thirds indicated it was not important.

Table VI-n. -- Importance of visits to schools by industrial representatives as a technique in assisting selection of non-traditional training

Respondents	Importance of industrial representative visit (percent)		
	Very	Somewhat	Not
Students	15.2	18.0	66.7
Educational personnel	40.3	54.5	5.2
Counselors	32.6	62.8	4.7
Teachers and other personnel	43.2	51.4	5.4
Secondary	16.4	76.7	9.6
Postsecondary	11.4	57.1	31.4

Counselors considered such visits less useful than other school personnel. Differences between the percentages of secondary and postsecondary school personnel who felt that the technique was very useful were small, but many more postsecondary school personnel (31%) than secondary school personnel (10%) considered it important.

4. Parental Involvement

Programs involving parents are available in 54% of the responding schools; 77% of the secondary schools have such programs, while only 26% of the postsecondary schools have such programs. Since parental involvement is most influential on younger women, this relative emphasis at the secondary level over the postsecondary level seems appropriate. Given the emphasis which the students have placed on the influence of their parents in their choice of training area, even greater emphasis on such programs at the high school (and junior high school) level would be warranted.

School personnel were asked if they felt consultation with parents was a useful mechanism for decision-making and support. Only 12% reported this technique as being very useful for decision-making. Group counseling was the only technique rated less important by school personnel. Whether

Table VI-o. -- Importance of parents in assisting student in selecting non-traditional training and in supporting student

Respondents	Importance (percent)					
	Parental assistance in decision-making (consultation)			Securing parental support		
	Very	Somewhat	Not	Very	Somewhat	Not
Students						
Mothers influence	19.7	30.6	49.8			
Fathers influence	18.7	25.6	55.7			
Educational personnel	12.4	66.9	20.7	48.8	37.8	13.4
Counselors	7.5	75.0	17.5	45.9	45.9	8.1
Teachers and other personnel	14.3	63.8	21.9	50.0	34.4	15.6
Secondary	16.0	74.7	9.3	59.7	38.8	1.5
Postsecondary	8.6	58.6	32.9	36.7	36.7	26.7
Men	11.4	66.7	21.9	51.0	33.3	15.6
Women	16.1	67.7	16.1	41.9	51.6	6.5

responses were from counselors (8%) or teachers (14%), from secondary school personnel (16%) or postsecondary school personnel (9%), all shared in giving this technique a very low rating. Far more educational personnel (49%) felt that parental involvement was an important support mechanism; this was true for counselors (46%), teachers (50%), and an unexpectedly high percentage (37%) of postsecondary school personnel.

In general, school personnel perceive parental involvement as being important for providing support to the students, but not for assisting

women in choosing their careers. In sharp contrast, however, the students felt that their parents had been the most influential in their choice of training programs.

Since Non-traditional women indicate that parents are the most influential persons in their career decision-making, school personnel clearly should make a greater effort to inform parents and work with them in the decision-making process as well as in supportive areas. The possibility of utilizing the influence of parents in expanding women's career options in the non-traditional areas has obviously not been fully explored. It must be kept in mind that parents as well as women students are often ill-informed about job opportunities. Parents abilities to influence their children positively can only be expanded if their own knowledge of career opportunities is also expanded. Reassessment by educators of the parental role in career decision-making is clearly required.

5. Career Education and Career Orientation

Career education was the third most important decision-making technique identified by the Non-traditional students; 22% indicated that it was very important compared to 17% that considered career orientation very important. Among Traditional students, the response was 28% and 23% respectively. (See Table VI-1.) Although the rating by educational personnel was considerably higher (44%) than that of the students, the students gave a relatively greater weight to this technique than did the

Table VI-p. -- Importance of career education and career orientation as techniques for assisting students in selection of non-traditional training

Respondents	Importance in decision-making (percent)					
	Career education			Career orientation		
	Very	Somewhat	Not	Very	Somewhat	Not
Students	22.2	20.5	57.3	16.7	18.5	64.8
Educational personnel	43.5	54.5	1.9	43.3	53.5	3.2
Counselors	47.6	52.4	--	41.5	56.1	2.4
Teachers and other personnel	42.0	55.4	2.7	44.0	52.6	3.4
Secondary	48.7	50.0	1.3	44.7	52.6	2.6
Postsecondary	38.5	59.0	2.6	42.0	54.3	3.7

educational personnel. At 22%, the students' rating of career education compares favorably with the 25% of students who considered individual counseling as very important, whereas the 44% response of educational personnel to career education is far lower than the 71% of educational personnel who found individual counseling very important.

There is the possibility that there has been some confusion with terminology on the part of both Non-traditional and Traditional students and the educational personnel between career education and career orientation. The students indicate a preference for career education over career orientation, whereas the educational personnel gave the same rating to both programs (43%). Teachers and other school personnel respond similarly on both, but counselors place a relatively higher value on career education (48%) than on career orientation (42%).

Examining the students' responses by age group also leads us to question whether there is confusion in terminology.

Table VI-q. -- Importance of career education and career orientation in decision-making, by student age

Age	Career education			Career orientation	
	Students considering important (percent)				
	Non-traditional	Traditional		Non-traditional	Traditional
17 - 19 years***	53.2	69.5[a]	***	45.4	60.7[a]
20 years*	43.3	59.5[b]		38.5	41.8[b]
21 - 24 years	42.7	53.8	*	32.2	47.1
25 - 29 years**	34.6	56.0	***	23.6	50.0
30 years or more	28.9	34.5		29.5	32.2
	Nt x^{2***}, Trad x^{2***}			Nt x^{2***}, Trad x^{2***}	

a^*, b^*

Since career education is a relatively new program, it can be expected that older Non-traditional students 25 and over would have had little experience with the program. Additionally, we can assume that many of the younger students have not participated in the program either, since it is not offered in all secondary schools. The issue warrants further investigation, particularly to determine the importance of career education for women known to have participated in such programs. Considering the generally negative response to the various career decision-making techniques offered to women, and the limited number of women who are likely to have been in a career education program, the response to career education by women in non-traditional training seems to be positive, if one could be certain that there is no overlap with career orientation, and that the very large (17%) differential between positive responses by Non-traditional and Traditional students is not due to bias toward traditional roles in the way the course is taught in many schools. Further investigation is warranted to clarify these issues.

6. Talking with Women

Educational personnel were asked to rate the value of talking with women who have successfully "made it" in non-traditional jobs as a technique to support women who had selected non-traditional training. The

technique was available in 63% of the schools of the educational personnel responding, in 58% of the secondary schools and 68% of the postsecondary schools.

Table VI-r. -- Importance of talking with successful women in non-traditional jobs, as a support activity for women in

Educational personnel	Importance of talking with women (percent)		
	Very	Somewhat	Not
Total	81.3	16.4	2.2
Counselors	78.4	21.6	--
Teachers and other personnel	82.5	14.4	3.1
Men	78.4	18.6	2.9
Women	90.6	9.4	--

This technique was rated highly by the educational personnel, 81% of whom considered it very important. Teachers and other school personnel considered it more important than counselors (83% to 78%), but a very high proportion (91%) of women educational personnel considered it very important. Further investigation is warranted to determine student response and to experiment with expanded use of this technique at the secondary school level.

7. Vocational Testing

Another important area of difference between the perceptions of students and educational personnel is in vocational testing. Non-

Table VI-s. -- Importance of vocational testing in assisting student selection of non-traditional training

Respondents	Importance of vocational testing (percent)		
	Very	Somewhat	Not
Students	12.4	22.3	65.2
Educational personnel	26.3	61.0	12.7

traditional women, particularly older Non-traditional women, tended to find vocational testing not useful. Almost two-thirds (64%) of all Non-traditional women felt that such tests were not important. Younger Non-traditional students tended to find the tests more useful than older Non-traditional students, and the Non-traditional students 25-29 years of age found these tests least useful. (See Table VI-19.)

Despite the predominant view by educational personnel in the sample, that vocational testing was generally not useful, most of the schools that they represented, both secondary and postsecondary, either required or encouraged their women students to take such tests.

Table VI-t. -- Vocational testing policy of secondary and postsecondary schools

Policy	Response (percent)	
	Secondary	Postsecondary
Required testing	24.6	12.0
Encouraged testing	43.2	42.0
Testing on request	32.2	46.0

In the 55% of all schools represented where vocational tests are not mandatory, less than a quarter of the students were reported to have taken the tests. The percentage who did was particularly low in post-secondary schools. (See Table VI-23.)

The tests which were reported most often 1/ by the educational personnel as useful for women considering non-traditional training programs are:

Table VI-u. -- Tests reported as useful to women considering non-traditional training 1/

Name of test	Number of personnel whose schools use test (n=163)	Number of personnel considering test very useful	Number of personnel considering test somewhat useful
1. Kuder Interest Inventory	46	9	21
2. General Aptitude Test Battery (GATB)	34	13	15
3. Armed Services Vocational Aptitude Test Battery (ASVAB)	30	9	11
4. Strong Campbell Interest Inventory (Strong II)	30	5	12
5. Differential Aptitude Test (DAT)	17	5	8
6. Ohio Vocational Interest Survey (OVIS)	17	5	6
7. Holland Self Directed Search (SDS)	14	6	3
8. California Occupational Preference Survey (COPS)	8	0	5
9. American College Testing Program (ACT)	6	2	3
10. Jobo	5	3	1
11. Edwards PPI (Personality Preference Inventory)	4	0	2

1/ List reflects those tests which were mentioned by 4 or more respondents. Over 50 other tests were mentioned, each was named by less than 4 respondents and even fewer found them useful.

E. Summary

Much that is presently being offered women as counseling techniques is not accomplishing the purpose for which it was intended. There is a need for a systematic evaluation of each of the techniques designed to help students choose careers in order to determine how these techniques can best be utilized to encourage women to choose non-traditional careers, and to support them once they have made the decision. At present, women who have entered non-traditional vocational training have apparently relied on their own sources of information to make their decision. This is not adequate if more than a few women are to move into non-professional, non-traditional occupations.

VII. Relevance of High School Preparation

Students were asked if their high school courses prepared them for the training program in which they were enrolled. More than half of all Non-traditional women (54%) stated that their high school experience did not prepare them. In contrast, only 25% of the Traditional women felt a similar lack of preparation.

Table VII-a. -- Preparation in high school for postsecondary program

High school did prepare	Student response (percent)	
	Non-traditional	Traditional
Yes	13.3	34.4
No	54.0	24.5
A little	32.7	41.0

x^{2***}

As will be seen below, this differential between Non-traditional and Traditional women, although varying in degree, remained when the data were crosstabulated by a variety of educational, experiential, and socio-demographic characteristics.

A. High School Curriculum

The type of high school curriculum (College Preparatory, General Education or Vocational Education) taken by the women students was a significant variable for determining how they viewed their high school preparation in relation to their present training.

Table VII-b. -- High school curriculum

High school curriculum	Students (percent)	
	Non-traditional	Traditional
College preparatory	37.1	29.6
General education	33.5	28.5
Vocational education	29.3	41.9

x^{2***}

More Non-traditional women (37%) had had a college preparatory curriculum in high school than did Traditional women (30%); and slightly more Non-traditional women (34%) were in the general education high school curriculum than were Traditional students (29%). Only 29% of Non-traditional women had been in a vocational education curriculum in high school compared to 42% of Traditional women. Over half of all the Non-traditional students who had had a vocational education curriculum in high school had majored in business occupations, while almost three-fourths of all Traditional students who had had a vocational education curriculum had majored in this area.

Table VII-c. -- High school vocational education by broad classification

Classification	Students in vocational education (percent)	
	Non-traditional	Traditional
Business	54.2	72.7
Health and home economics	15.9	17.6
Distributive education	11.6	3.5
Technical, trade and industrial, and agricultural	13.5	2.3
Other (n.e.c.)	4.8	3.9

x2***

Of the students who felt that high school did not prepare them for their postsecondary education, those who had been in a general curriculum were least satisfied, and the Non-traditional women with general curriculum backgrounds (64%) were far more dissatisfied than the Traditional students (30%).

Non-traditional women who had taken Trades and Industry, Technical or Agriculture vocational education subjects in high school felt significantly more prepared than other Non-traditional women.

Table VII-d. -- Lack of preparation in high school for present programs, by high school curriculum

High school curriculum	Students responding high school did not prepare (percent)	
	Non-traditional	Traditional
College preparatory***	46.7	21.7
General education***	63.7	30.4
Vocational education***	51.8	22.2
Trade and industrial, technical and agricultural	32.4[a]	0.0
Distributive	42.3	22.2
Home economics, health, business	56.1[a]	21.4

Nt x^{2***}, Trad x^{2***}
a^{*}

Only 32% of the Non-traditional women who had taken these curricula in high school felt unprepared, compared to 47% and 64% of the women who had been enrolled in other high school curricula. In contrast to the relative lack of preparation felt by Non-traditional women, only 30% of Traditional women who had taken general curriculum and about 22% of all other Traditional women felt ill-prepared for their postsecondary training.

When the secondary and postsecondary curricula (including college preparatory and general education) of all the students were compared to their current training, only 6% of Non-traditional students were found to have had matching secondary and postsecondary curricula while 26% of Traditional students had matching programs. 1/

Table VII-e. -- Relationship of training in high school to present program

Relationship	Students (percent)	
	Non-traditional	Traditional
Matching programs***	6.2	25.8
Programs do not match	93.8	74.2

1/ Vocational programs were matched by their broad classifications.

Part of this difference can be accounted for by the lower proportion of Non-traditional women (29% compared to 42% of Traditional women) who were in vocational education curricula when they were in high school. However, of all persons who were enrolled in vocational education in high school, 21% of those presently in non-traditional areas and 62% of those presently in traditional areas had matching vocational training programs. Related to this finding, the highest percentage of Non-traditional women indicating that high school had not prepared them for postsecondary school was among those whose high school curriculum did not match their postsecondary curriculum.

Table VII-f. -- Preparation in high school, by relationship of high school training to present program

High school did prepare (percent of students)	High school training matches present program			
	Non-traditional		Traditional	
	Match	No match	Match	No match
Yes	40.4	11.5[a]	64.3	24.0[a]
No	23.1	56.0[b]	7.6	30.4[b]
A little	36.5	32.5	28.0	45.6

x^{2**}, Nt x^{2***}, Trad x^{2***}
a^{***}, b^{***}

Even where their secondary and postsecondary programs matched, there were significantly fewer Non-traditional women (40%) than Traditional women (64%) who felt that their high school programs had prepared them for their postsecondary training. Another 60%, however, who had taken what should have been appopriate high school curricula since it matched their postsecondary curricula, still felt unprepared by high school. Important other factors are obviously intervening, such as the quality of the vocational education program, the appropriateness of the related instruction (math and science) and, particularly, the availability of sufficient technical courses.

B. Relationship of Age to Students Assessment of High School

There is a significant difference by age between the percentage of Non-traditional and Traditional women who believed that high school did not prepare them for their postsecondary programs; more Non-traditional women at every age level felt that high school had not prepared them. Forty-four percent of the Non-traditional women who were immediately out of high school, (the 17-19 year olds) felt that high school had not prepared them for their postsecondary school course work.

Table VII-g. -- Lack of preparation in high school for present program, by students age

Age group	Students responding high school did not prepare (percent)	
	Non-traditional	Traditional
17-19 years***	44.4	17.9
20 years***	59.6	30.4
21-24 years**	58.0	39.4
25-29 years***	61.4	22.0
30 years and over***	56.1	25.0

Nt x^2 **, Trad x^2 **

Approximately 60% of all Non-traditional women 20 years of age and older expressed the view that high school had not prepared them. As with the Non-traditionals, more younger Traditional women (17-19 years old) compared to older Traditional women felt that their high school background had prepared them for their present training. However, even among the most prepared age group of Non-traditionals (17-19 years old), women felt less well prepared than the least prepared Traditional students (25-29 years old).

The greater length of time since they had studied in high school might account for why older women in the sample felt less prepared by high school than the younger women. There is no good explanation, however, for why so large a group of younger Non-traditional women felt ill-prepared unless, in fact, they were ill-prepared.

C. Minority Women: A Special Analysis by Race, Income and Geography

As has been shown, markedly more dissatisfaction with high school preparation was expressed by Non-traditional women than Traditional women. The urban, poor Minority women warrant the most attention, however, so that efforts can be made to improve their high school preparation. Our data indicate that the urban slum high schools are even less equipped than other schools to prepare women for Non-traditional training in postsecondary schools.

By Race

Both White and Minority Non-traditional women differed markedly from White and Minority Traditional women.

Sixty-three percent of all Minority, Non-traditional women compared to 52% of all White Non-traditional women did not think high school prepared them for postsecondary school. This compared to a small 19% of Minority Traditional women and 25% of White Traditional women.

Table VII-h. -- Lack of preparation in high school, by race

Race	Students responding high school did not prepare (percent)	
	Non-traditional	Traditional
White***	52.3[a]	25.1
Minority***	63.3[a]	19.0
Black***	62.7	25.0

[a]*

It is important that more Minority Non-traditional women felt ill-prepared than White Non-traditional women, but fewer Minority Traditional women than White Traditional women felt this way.

By Income

Income level is not a factor in determining the Traditional women's attitude toward the relevance of high school preparation. At all income levels about 24% felt unprepared.

Table VII-i. -- Lack of preparation in high school by household income

Household income (annual)	Students responding high school did not prepare (percent)	
	Non-traditional	Traditional
$0 - 5,000***	69.0	25.0
$5,001 - 10,000***	60.0	23.7
$10,001 - 15,000***	48.6	24.3
$15,001 and over***	50.6	24.7

Nt x^{2***}

However, for Non-traditional women there is a marked difference (with an eighteen percentage point spread) in the views of women with family incomes from under $5,00 to those with incomes over $15,000 concerning the value of their high school experience in preparing them for postsecondary education. Of particular significance is the fact that 69% of all Non-traditional women with incomes under $5,000 indicated that their high school education did not prepare them for postsecondary school. This was also the case among Minority women.

Urban/Rural

More urban Non-traditional women (57%) felt unprepared by their high school than rural women (45%); however, Non-traditional women felt markedly less prepared than their Traditional counterparts in urban areas (57% to 28%), and in rural areas (45% to 19%).

Table VII-j. -- Lack of preparation in high school by urban/rural location

Location	Students responding high school did not prepare (percent)	
	Non-traditional	Traditional
Urban***	56.9	27.5
Rural***	45.0	18.7

Nt x^{2} **, Trad x^{2} **

The lower percentage of rural women who were dissatisfied raises the question of whether rural women might expect less from their schools, or whether the rural schools are in fact preparing students better than the urban schools.

Race, Income and Urban Non-Traditional Women

When one examines the question of high school preparedness across the three variables of race, income, and urban/rural location; a major problem emerges that concerns urban schools in poverty neighborhoods. Among the Non-traditionals, 63% of the Minorities, 69% whose familes had incomes under $5,000, and 57% of those in urban areas, viewed their high school preparation negatively. The views of these women were significantly different from those of the White Non-traditional women (52%), those of higher income (51%) or those from rural areas (45%). Together these data suggest that the urban slum high schools are least able to prepare women for opportunities in the Non-traditional occupations. This conclusion seems unchallengeable.

D. Math and Science Preparation--Math Filter

It is generally recognized that as young women progress through junior high and high school, at each level they take progressively fewer math courses than young men. This problem which is called the "math filter" has been identified as an important factor limiting women from entering certain fields of professional training at the college and graduate level. We have hypothesized that a similar math filter exists which makes it equally difficult for women to enter Non-traditional, non-professional, technical and

skilled occupations. For this reason, we have analyzed in detail the number of math and science courses taken by the women in our sample.

The distributions of semesters of math taken by the Non-traditional and Traditional students are virtually the same. (See Table VII-11.) This is also true for each of the sciences--biology, chemistry, physics, general science, earth sciences and other sciences--as well for all sciences combined. (See Table VII-12.)

Non-traditional and Traditional students who had been in colege preparatory curriculum in high school have taken more math courses than students in general or vocational education programs, and there were more college preparatory students among the Non-traditional women than among the Traditional women.

Table VII-k. -- Math semesters completed, by high school curriculum

High school curriculum	Math semesters completed (percent of students)					
	Non-traditional			Traditional		
	0-2	3-4	5 or more	0-2	3-4	5 or more
College preparatory	13.4	34.8	51.8	14.1	36.7	49.2
General education	35.9	38.0	26.0	34.7	37.7	27.6
Vocational education	41.1	38.6	20.3	42.1	41.7	16.2

Nt x^{2} ***, Trad x^{2} ***

Within each type of curricula, however, there was no marked difference in the number of math and science courses taken by the Non-traditional and the Traditional women. The same situation prevails for science courses and for science and math combined. (See Tables VII-14 and 15.)

The following findings highlight some differences in the math and science preparation of Non-traditional and Traditional women:

Age

- Proportionately more 17-19 year old women (both Traditional and Non-traditional) had taken 5 or more math semesters than older women. The same is true for science. (See the following table and Table VII-17.)

Table VII-1. -- Math semesters completed, by student age group

Age	Math semesters completed (percent of students)					
	Non-traditional			Traditional		
	0-2	3-4	5 or more	0-2	3-4	5 or more
17-19 years	28.2	33.1	38.7	33.6	35.4	31.0
20 years	26.9	47.1	26.0	32.9	40.5	26.6
21-24 years	34.3	31.5	34.3	29.8	48.1	22.1
25-29 years	28.3	40.9	30.7	44.0	30.0	26.0
30 years and over	39.6 ø	30.9	29.5	36.8	32.2	31.0

Nt x^2 * ø *

- Proportionately more women 30 years of age and older (both Traditional and Non-traditional) had taken only 0-2 semesters of math than younger women. The same is true for this age group in enrollment in science.

- The largest difference in amount of math taken by Non-traditional and Traditional women occurs among the 17-19 year olds where Non-traditional women have taken more such courses than Traditional women. There is no great difference in their science backgrounds.

Racial/Ethnic Group

- Fewer Minority women have had 5 or more semesters of math than White women and more have had 3 or less semesters. The same is true for science. (See Tables VII-m and VII-20.)

Table VII-m. -- Math semesters completed, by racial/ethnic group

Racial/ethnic group	Non-traditional			Traditional		
	Math semesters completed (percent of students)					
	0-2	3-4	5 or more	0-2	3-4	5 or more
White	32.1	33.2	34.6	28.4	39.5	32.1
Minority	32.2a	47.1	20.7	51.9a	36.7	11.4
Black	33.8	46.8	19.5	46.4	42.9	10.7

Nt x^{2**}, Trad x^{2***}
a^{**}

- Proportionately more Non-traditional Minority women have had 5 or more semesters of math than Traditional Minority women. Similar differences exist for science although they are smaller.

Urban/Rural Residence

- In rural areas, proportionately more Non-traditional than Traditional women have had only a few (0-2) semesters of math.

Table VII-n. -- Math semesters completed, by urban/rural residence

Location	Non-traditional			Traditional		
	Math semesters completed (percent of students)					
	0-2	3-4	5 or more	0-2	3-4	5 or more
Urban	26.7[a]	39.1	34.2	34.2[a]	36.0	29.8
Rural	35.4	30.2[b]	34.4	26.4	45.2[b]	28.4

Nt x^{2}*
a*, b**

- In urban areas proportionately more Traditional women have had only a few (0-2) semesters of math.

Although there are some small differences in the high school math/science backgrounds of women enrolled in Non-traditional and Traditional programs by such variables as age, minority status, and urban/rural residence, the differences are only occasionally statistically significant. There are, however, relevant and important differences in Non-traditional students views of high school preparation in relation to their math and science experience.

As the number of math courses taken by Non-traditional women increased, perceptions that high school did not prepare them for their postsecondary programs decreased. Sixty-six percent of the Non-traditional women who had 0-2 courses of math, 54% of those who had had 3-4 courses of math, and 44% of those who had had 5 or more courses of math felt they had not been prepared by their high schools. This is a significant decrease of ten percentage points at each interval.

Table VII-o. -- Students lack of preparation in high school, by number of math semesters completed

Math semesters completed	Percent responding high school did not prepare	
	Non-traditional	Traditional
0-2***	65.7	24.7
3-4***	53.8	25.3
5 and over***	44.1	20.4

Nt x^{2***}

In the Traditional sample, the number of math courses taken did not significantly change perceptions of the extent to which high school prepared the students. Twenty-five percent of Traditional women with only 0-2 semesters of math felt unprepared by high school, while 20% of Traditional women with 5 or more semesters of math felt unprepared by high school. The absence of any significant variation in the perceptions of Traditional women about their high school preparation by number of semesters of math taken highlights the relatively greater importance of math to Non-traditional women.

The data for science courses were similar. As the number of science courses taken by Non-traditional women increased, the percentage of those who felt unprepared decreased (from 63% to 48%).

Table VII-p. -- Lack of preparation in high school, by number of science semesters completed

Science semesters completed	Students responding high school did not prepare (percent)	
	Non-traditional	Traditional
0 - 2***	63.3	23.0
3 - 4***	55.4	23.0
5 and over***	47.7	26.5

Nt x^{2**}

The variation in the number of science semesters taken by Traditional students on the other hand, did not affect perceptions of high school preparation.

Upon examining semesters of math and science taken together, one finds, once again, no apparent differences in perceptions of high school preparation among Traditional women.

Table VII-q. -- Lack of preparation in high school, by number of math and science semesters completed

Total math and sciences semesters completed	Students responding high school did not prepare (percent)	
	Non-traditional	Traditional
0 - 4***	68.1	25.6
5 - 8***	58.3	22.6
9 and above***	46.8	25.9

Nt x^{2***}

Women who had had four or less semesters of math and science combined felt they had been unprepared in high school. The percent drops to 47% for those Non-traditional women who had had 9 or more courses of science and math combined.

Urban/Rural

In examining perceptions of high school preparation and semesters of math and science taken by urban/rural residence, one finds the effect of the number of either math or science semesters taken by urban Non-traditional students to be quite similar. Sixty-nine percent of those students who have had only a few courses of math during high school felt ill-prepared for their current program and 64% of those students who have had only a few courses of science during high school felt ill-prepared. Among Non-traditional students who had had 5 or more courses, the perception of non-preparation dropped to 47% in the case of math and to 49% in the case of science. In each case, however, almost half of the sample still felt unprepared for their current program.

Table VII-r. -- Lack of preparation in high school, by number of math semesters completed and urban/rural residence

Residence	Students responding high school did not prepare (percent)					
	Non-traditional			Traditional		
	Math semesters completed					
	0-2	3-4	5 or more	0-2	3-4	5 or more
Urban***	69.0	56.5	47.4	28.6	27.9	22.7
Rural***	57.7	42.4	33.8	15.1	21.3	19.2

Nt urban x^{2***}, Nt rural x^{2*}

The pattern was markedly different for urban Traditional women. As the number of courses in math decreased, the percentage who felt ill-prepared increased only slightly. Overall, only 29% of those who had taken few math courses and only 24% of those who had taken few science courses felt ill-prepared for their current program.

Table VII-s. -- Lack of preparation in high school by number of science semesters completed and urban/rural residence

Residence	Students responding high school did not prepare (percent)					
	Non-traditional			Traditional		
	Science semesters completed					
	0-2	3-4	5 or more	0-2	3-4	5 or more
Urban***	63.7	61.9	48.7	23.5	25.6	31.4
Rural***	61.5	35.3	45.1	21.6	17.5	18.4

Nt urban x^{2}**

Compared to their urban counterparts, proportionately fewer rural Traditional women felt unprepared by high school. Like their urban counterparts, however, variations in the semesters of math and science taken did not appreciately change the percentage of rural Traditional women who felt prepared or unprepared by their high school education.

Rural Non-traditional women exhibit a pattern that is different from rural Traditional women and somewhat different from urban Non-traditional women. In the case of science, having had few courses affects rural and urban Non-traditional women in much the same way. Sixty-two percent of rural Non-traditional women compared to 64% of urban Non-traditional women who have had only 0-2 years of science courses felt that high school had not prepared them for postsecondary schools. In the case of math, 58% of rural Non-traditional with few courses felt ill-prepared, while a significantly greater 69% of urban Non-traditional women who had had few courses felt ill-prepared by high school. As the number of courses increases, the percent who felt ill-prepared drops more rapidly in the rural Non-traditional sample than in the urban Non-traditional sample.

The fact that differing patterns emerge for rural and urban students suggests that while the lack of math and science during high school has a marked effect on Non-traditional women, both urban and rural, and while an increase in courses taken in these subjects during high school is likely to markedly improve women's feelings of preparedness by high school, there are still other factors besides science and math that must be considered in order to improve the preparation of women for Non-traditional training.

The data that are presently available do not permit one to determine how the math and science courses in high school prepare students in urban and rural areas differently. Factors such as postsecondary curricula in rural and urban schools, or the percentages of Minority students in the schools and their differing responses to these issues may be involved. In any case, further investigation to determine the impact of the math and science filter on preparation for training in non-traditional technical and skilled occupations is warranted.

E. Conclusions

In general, Non-traditional women felt less well prepared for their postsecondary training than Traditional women. Urban women generally felt less well prepared than rural women, and older women felt less prepared than younger women. Those who felt least well prepared were three groups of Non-traditional women--those who were low income, in urban areas, or were Minority women, particularly those who were Black. Women who felt most well prepared, were women whose secondary and postsecondary vocational curricula matched.

Although taking more math and science courses apparently does allay the feeling of unpreparedness on the part of Non-traditional women, taking more courses alone would clearly not be enough. Almost half of all Non-traditional women, even those with nine or more semesters in science and math still feel unprepared. It is our hypothesis (which, as we will see, is supported by data in Problems and Difficulties) that a background in technical subjects in high school is apparently perceived by the women themselves as a more critical factor than math and science.

VIII. Motivational Factors

To find out what the motivating factors were that had attracted them to their areas of vocational training, the women in the sample were asked to rate the following list of factors as very important, somewhat important or not important when they chose their present areas of vocational training:

- Have interest or ability in the area;
- Attraction of working conditions (steady work, many available jobs, opportunity for advancement, etc.);
- Likely to earn good income;
- Had been working and wanted to change or improve work skills;
- Other.

The educational personnel who were surveyed were given a similar list and asked to indicate what they perceived to be the important factors motivating young women entering non-traditional training. 1/ In this section, the responses of women students and educators about the various motivations are analyzed and compared. 2/

The women indicated that Interest and Ability in the area was the most important factor that motivated them to select a particular area of occupational training. Seventy-seven percent of the Traditional students and 80% of the Non-traditional students indicated that this factor was very important in their selection of occupational programs. Ninety-six percent of the Traditional students and 97% of the Non-traditional students sampled considered Ability and Interest in the area either important or very important in their choices.

1/ The educators were also asked to rate the relative importance of "enjoys working with men." All groups of educational personnel agreed that this was not a critical factor for women selecting non-traditional training. This is an important finding since that factor is very commonly considered a major motivation for women to choose non-traditional occupations.

2/ As in the previous section, since the educational personnel surveyed are those who were identified as having been influential for Non-traditional students, only the responses of Non-traditional students are compared with those of educational personnel. Responses of Traditional students are compared with those of Non-traditionals, but not with educational personnel.

Table VIII-a. -- Personal desires and occupational conditions influencing training choice for students

Influence	Non-traditional	Traditional
	(percent)	
Ability or interest		
Important	97.0	95.5
Very	79.9	76.5
Somewhat	17.1	19.0
Working conditions		
Important***	84.2	90.9
Very	46.5	57.2
Somewhat	37.7	33.7
Earnings		
Important	82.2	85.8
Very*	36.5	41.8
Somewhat	45.7	44.0
Change or improve skills		
Important	57.4	54.9
Very	35.9	32.0
Somewhat	21.5	22.9
Named other factor		
Important***	25.1	15.7

Working Conditions was mentioned as an important factor second most often and Earnings was mentioned third. A desire to Change or Improve one's Skills was mentioned least often as an important factor for selecting a particular training area.

There was little difference between the percentages of Non-traditional and Traditional students who mentioned either Ability and Interest or Desire to Change and Improve Skills as important factors in their decision-making. However, the percentages of Traditional students who considered potential earnings and working conditions as very important factors in their occupational choices were unexpectedly larger than the percentages of Non-traditional students who indicated that these factors were important.

A small percentage of women cited other motivations. 1/ These included: availability of the program as an alternative to college, presence of a friend or relative in the field and desire for independence,

1/ Twenty-five percent of the students in the non-traditional sample and 15% of the students in the traditional sample named a specific "other" factor that led them to choose their present area of training. In most cases, however, the explication merely detailed one of the factors already listed.

self-development or advancement in their present jobs. Some women considered the training that they were involved in was a means of helping people or contributing to society.

The responses by students and by educational personnel to each of the four major motivational factors in selection of training programs are analyzed below.

A. Interest and Ability

Interest and Ability was far and away the most influential factor in women's decisions to enter non-traditional training. This was also true of Traditional women, and educational personnel concurred. (See Table VIII-2.) Each group considered Interest and Ability as the most important factor in selecting training.

B. Influence of Working Conditions

There is a ten percentage point differential between Non-traditional women (47%) and Traditional women (57%) who consider Working Conditions (defined in the questionnaire as steady work, many available jobs, and opportunity for advancement) as very important in their choice of training.

Working Conditions are also considered important by relatively more educational personnel (69%) than Non-traditional students (47%); counselors (76%) and women educators (74%) tended to consider Working Conditions more important in the Non-traditional students choice than teachers (66%) or male educational personnel (67%).

Table VIII-b. -- Importance of working conditions in selection of non-traditional training.

Respondents	Importance of working conditions (percent)		
	Very	Somewhat	Not
Students	46.5	37.7	15.8
Educational personnel	68.7	29.4	1.8
Counselors	75.6	24.4	---
Teachers	66.1	31.4	2.5
Men	67.2	30.4	2.4
Women	73.7	26.3	---

C. Impact of Anticipated Earnings

More women in traditional training occupations (42%) than in non-traditional training (37%) considered Earnings a very important factor. The percent of Non-traditional women who consider Earnings as very important bears a direct relationship to household income. Non-traditional women whose household incomes were in the lowest range ($0-5,000) felt that Earnings was most important, while women who did not know what their family total income was, felt Earnings was least important. The relationship between household income and the importance of earnings as a factor in choosing an area of training did not exist for women in the Traditional sample. At every income level, more women in traditional training considered Earnings important than women in non-traditional training.

Table VIII-c. -- Importance of earnings as a factor in selection of training, by household income

Household income	Percent responding earnings very important	
	Non-traditional	Traditional
$0 - 5,000	47.4	50.0
$5,001 - 10,000	43.4	44.9
$10,001 - 15,000	37.8	39.1
$15,001 - 20,000	36.7	44.1
$20,001 or more	29.7	38.6
Don't know	25.2	41.3

Nt x^{2}**

Minority women, both Traditional and Non-traditional, indicated the importance of Earnings more often than White students. (See Table VIII-5.)

Compared to the Non-traditional students, 37% of whom indicated that Earnings had been a major factor in their selection of a non-traditional occupational training program, a larger percentage of the educational personnel who were surveyed (49%) thought that Earnings was a very important factor for women who select non-traditional occupational programs.

Table VIII-d. -- Importance of earnings as a factor in selection of non-traditional training

Respondents	Importance of earnings (percent)		
	Very	Somewhat	Not
Non-traditional students	36.5	47.5	17.8
Educational personnel	49.4	48.8	1.8
Counselors	53.3	46.7	---
Teachers	47.9	49.6	2.5
Men	44.4	53.2	2.4
Women	65.8	34.2	---

All groups of educators agreed on the importance of Earnings, although counselors tended to rate its importance somewhat higher than other educators. Women educational personnel considered Earnings as particularly important. Sixty-six percent of the women educators in the sample felt Earnings was an important factor--nearly 30 percentage points more than the percentage of Non-traditional students who considered the issue an important deciding factor.

The opportunity to earn more money is frequently offered as the major reason why women should select non-traditional occupations. Traditional women in the sample, however, placed a higher emphasis on their earnings than the Non-traditional women did. Reasons for this difference cannot be determined. Income may not be as critical an issue for women who go into non-traditional occupational training, although the earning levels of the non-traditional occupations overall tend to be higher than the earning levels of the traditional occupations.

D. Changing or Improving Skills

There is little difference between women in traditional and non-traditional training in terms of the importance that Changing or Improving Skills has had on their choice of careers. Both Non-traditional women (39%) and Traditional women (36%) who are employed, considered Changing or

Table VIII-e. -- Desire to improve skills as an important factor in selection of training, by employment characteristics

Employment characteristic	Percent responding improving skills very important	
	Non-traditional	Traditional
Employed	39.2	35.9
Not employed	27.6	28.8

Nt x^{2***}, Trad x^{2***}

Improving their Skills as very important factors in their choice of training areas. The importance the employed women gave to this factor was significantly higher than the important given by those who were not working (28% and 29% for Non-traditional and Traditional women, respectively).

The importance of this factor varies greatly by age. In both the Non-traditional and Traditional samples, improving job skills was far

more important for women over 20 years of age. The largest percentage of women considering this factor very important were those 25-29 years old

Table VIII-f. -- The desire to change or improve skills as a factor in selection of training, by age

Age	Percent responding improving skills was very important	
	Non-traditional	Traditional
17-19 years	19.4	21.1
20 years	27.9	22.8
21-24 years	41.3	45.2
25-29 years	59.8	58.0
30 years and over	45.6	43.7

Nt x^{2***}, Trad x^{2***}

for both Non-traditionals (60%) and Traditionals (58%), followed by women 30 and over (46% and 44%) and those 21-25 years old (41% and 45%). As we have already seen, a high percentage of Non-traditional women in their 20's (60%), are working.

Educational personnel are reasonably close to the women students in their view of the importance of Changing or Improving Skills (38%). Women school personnel (32%) consider it important less often than the men school personnel (40%).

Table VIII-g. -- Desire to change or improve skills as a factor in selection of non-traditional training

Respondents	Importance of improving skills		
	Very	Somewhat	Not
Students	35.9	21.5	42.6
Educational personnel	38.1	53.8	8.1
Counselors	39.5	48.8	11.6
Teachers	37.6	55.6	6.8
Men	39.8	52.0	8.1
Women	32.4	59.5	8.1

E. Conclusion

In summary, if the reasons Non-traditional women gave for selecting an occupation are compared, one finds 36% considered Improvement of Skills

very important, 37% considered Earnings very important, 47% noted Working Conditions as very important, and a remarkable 80% identified Interest and Ability as very important. Among the educational personnel, 94% also considered Interest and Ability important.

Since Interest and Ability is so consistently identified as being very important, it becomes clear that more emphasis should be given to relating personal interests and abilities to efforts to increase the number of women considering non-traditional training. Efforts should be made earlier in the educational process to stimulate young women's interest in non-traditional occupations, to identify those women with the ability to succeed in such occupations, and to encourage them to enter non-traditional career options. Women's interests and abilities in non-traditional areas will not develop unless efforts to encourage them are started early, preferably in junior high school, and continued throughout high school. If the only occupational areas in which women have the opportunity to develop their interests and abilities are in traditional areas, it is only to be expected that this is where their vocational goals will be when they enroll in postsecondary vocational schools.

IX. Problems and Difficulties of Women in Non-traditional Vocational Training

The women in the non-traditional sample were asked if they had had certain types of problems and difficulties during their training program (this question was not asked of the traditional or mixed samples). The specific areas of problems and difficulties for which students were to respond "yes," "somewhat," or "no," are as follows:

a. Men students find it difficult to adjust to women students;
b. Teachers find it difficult to adjust to women students;
c. Teachers pay more attention to the male students;
d. Counselors pay more attention to the male students;
e. Teachers expect women students to perform at a higher level than men students;
f. On the whole, the men students are better prepared than women students.

If "f" was marked either Yes or Somewhat, do you feel that is be cause in high school:

g. Men students had more science classes;
h. Men students had more mathematics classes;
i. Men had more trade and/or technical subjects.

The problems which Non-traditional students cited most often were related to the men students in their classes rather than to their teachers or counselors. The women felt that men students had difficulty adjusting to women in the class, and that men students were better prepared for their postsecondary training largely because they had taken more technical subjects in high school. The women felt that they had not received sufficient training prior to entering their postsecondary program. Women in classes with few other women students were having the most problems; the extent of the problems and difficulties decreased with the presence of more women in the non-traditional classes.

Sixty-four percent of all Non-traditional women had some problems, and of those 42% had only one problem, and 58% had two or more problems.

Table IX-a. -- Number of problems of Non-traditional students

Number of problems	Percentage of students (n = 860)	Percentage of students with problems (n - 554)
0	35.6	--
1	26.9	41.7
2	18.0	28.0
3 or more	19.5	30.3

Very few women (17% on an average) reported having any of the following specified problems: Counselors/Teachers Gave Men More Attention, Teachers Expect More of Women, and Teachers Had Difficulty Adjusting to Women. The percentages were small enough to indicate that these problems were not major issues for most of the Non-traditional women.

Table IX-b. -- Problems of Non-traditional students

Type of problem	Students responding yes or somewhat to problem statement	
	(Percentage of students responding to individual problem statement)	(Percentage of all students with problems)
Counselors gave men more attention	10.6	15.0
Teachers gave men more attention	14.6	21.8
Teachers expect women to perform to higher levels	20.9	31.2
Teachers had difficulty adjusting to women	23.3	34.8
Men had difficulty adjusting to women	33.9ϕ	50.9
Men are better prepared	35.4ϕ	53.1
Men had more science	22.5^{a}	16.8
Men had more math	23.5^{b}	18.4
Men had more technical subjects	71.1^{a,b}	59.4

both ϕ^{***}, a^{***}, b^{***}

On the other hand, 51% of all who had problems (34% of all Non-traditional women responding) agreed that Men Had Difficulty Adjusting to Women. Fifty-three percent of those who had problems (35% of all responding) perceived that Men Were Better Prepared. The type of better preparation which they cited was not predominantly in Math (24% of those responding) or in Science (23%). The better preparation they attributed to men was particularly in technical subjects. Seventy-one percent of all women who responded indicated that Men Had More Technical Subjects. This includes some women who did not specifically cite that Men Were Better Prepared, but noted that Men Had More Technical Subjects which caused the women problems. 1/ In fact, of all students with problems, women indicated that their lack of preparation in technical subjects (59%) compared to men students, was the greatest problem.

Given the opportunity to specify other reasons why men were better prepared, 20% of the students entered other reasons. Most (61%) of these other reasons given noted the following: that men were more supported in non-traditional work, that they were more encouraged in school, that they were provided with more knowledge of the subjects, and that they had previous experience through work experience and on-going projects in the home and community. The women felt, on the other hand, that they themselves had not been encouraged, had been actively discouraged, or had been discriminated against.

1/ Although the women were originally asked to respond to this question only if they had responded positively to the statement that Men Are Better Prepared, 56% more women in the sample indicated that Men Had More Technical Subjects than indicated that Men Are Better Prepared.

A. Minorities

There was little difference in the perceptions of Whites, Blacks, and all Minorities about the problems Men Had Difficulty Adjusting to Women, Counselors and Teachers Pay More Attention to Men, and Teachers Expect More of Women. On the other hand, the percentage of Black and Minority women who found that Teachers Had Difficulty Adjusting to Women was only half that of the White women. This may be due to the fact that Black and Minority women were more likely to attribute negative attitudes to their minority status, or that they expected less from their teachers than did the White women.

Table IX-c. -- Problems of Non-traditional students, by race and type of problem

Type of problem	Students responding yes or somewhat to problem statement (percent)		
	White	Minority	
		Total	Black
Counselors pay more attention to men	10.0	14.3	13.0
Teachers pay more attention to men	14.4	16.7	19.2
Teachers expect women to perform at high levels	21.1	20.7	20.3
Teachers had difficulty adjusting to women	24.5[a]	13.3[a]	12.8
Men had difficulty adjusting to women	35.2	29.8	29.1
Men are better prepared	36.9[b]	28.3	21.8[b]
Men had more science	22.9	20.8	16.0
Men had more math	22.7	27.4	23.5
Men had more technical subjects	71.4	69.7	67.3

a**, b**

There was also a great difference between Whites and Blacks on the issue of Men Are Better Prepared, but only a slight statistically insignificant difference between Whites and All Minorities. The statistical conclusion is that Minorities other than Blacks were in close agreement with Whites that Men Are Better Prepared. There is no immediate explanation why proportionately fewer Black women felt men were not better prepared. It may be that Black women were responding to a relatively poor level of preparation among Black men. (See comments on urban slum schools in Chapter VII, Relevance of High School Preparation.)

B. Specific Problems--Analyzed by Class Size

The number of other women in the class was a variable that had a major impact on the percentage of women who had problems. Fifty-four percent of the women with no problems were in classes with 6 or more other women; 50% of the women with problems were in classes with 0-3 women.

Table IX-d. -- Non-traditional students with problems, by number of women in the class

Number of other women in the class	Had no problems	Had one or more problems
	Percentage of students	
0 - 3	31.0	49.4
4 - 5	15.5	15.1
6 or more	53.6	35.4

x^{2***}

Among women in classes with 0-3 other women, only 23% had no problems; about the same percentage reported one, two and three a more problems. Among women in classes with 4-5 other women, 34% had no problems and the percent of women with more than one problem dropped significantly. Among women in classes with 6 or more other women, 42% had no problems and the percent with two or more problems continued to drop.

Table IX-e. -- Number of problems of Non-traditional women, by number of women in the class

Number of other women in the class	Number of problems			
	0	1	2	3 or more
	Percentage of students			
0 - 3	23.2	28.6	20.5	27.7
4 - 5	33.9	32.2	19.1	14.8
6 or more	42.2	25.9	16.9	15.0

x^{2***}

To determine if the presence of more women in the class affects the women's perception of specific problems and difficulties, each problem has been examined by the number of women in the class. The analysis reveals that the extent of the problems of Counselors and Teachers Pay More Attention to Men, Teachers Expect More of Women, Men Had More Math and Men Had More Science does not vary markedly by the number of women in the class.

Table IX-f. -- "Counselors and Teachers Pay More Attention to Men" and "Teachers Expect More of Women," by number of other women in the class

Number of other women in the class	Students responding yes or somewhat to problem statement (percent)	
	Counselors or teachers pay more attention to men	Teachers expect more of women
0 - 3	26.5	21.4
4 - 5	23.5	15.9
6 or more	24.1	21.8

Table IX-g. -- "Men Had More Math" and "Men Had More Science," by number of women in the class

Number of other women in the class	Students responding yes or somewhat to problem statement (percent)	
	Men had more math	Men had more science
0 - 3	24.4	24.9
4 - 5	21.5	24.6
6 or more	23.8	17.8

Although somewhat more women in classes with fewer women perceived that Men Had Difficulty Adjusting to Women, the difference based on number of women in the class was not statistically significant.

Table IX-h. -- "Men Had Difficulty Adjusting to Women," by number of other women in the class

Number of other women in the class	Students responding yes or somewhat to problem statement (percent)
0 - 3	38.7
4 - 5	32.2
6 or more	31.9

The number of women in the class does appear to be related to women perceiving that Teachers Find it Difficult to Adjust to Women. Changes in the number of women in the classroom apparently affects the extent to which teachers adjust to the different needs of their women students.

Table IX-i. -- "Teachers Had Difficulty Adjusting to Women," by number of other women in the class

Number of other women in the class	Students responding yes or somewhat (Percent)
0 - 3	31.0
4 - 5	19.1
6 or more	18.3

x^2***

There was a 30 percentage point difference in perceptions that Men Are Better Prepared between women in classes where there were few other women (51%) and women in classes with six or more other women (21%).

Table IX-j. -- "Men are Better Prepared," by number of other women in the class

Number of other women in the class	Students responding yes or somewhat (Percent)
0 - 3	51.2
4 - 5	33.9
6 or more	21.1

x^2***

This could be due to the fact that women in classes with three or less other women may be in subject areas where women are less likely to have adequate background preparation. Over half (51%) of the women in classes with only 0-3 other women felt that the men in their classes had been better prepared.

The widest variation in response by number of women in the class occurred on the question of whether Men Had More Technical Subjects. A very high 83% of women in classes with only 0-3 other women indicated that this was a problem, while only 57% of women in classes with 6 or more other women cited this problem.

Table IX-k. -- "Men had More Technical Subjects," by number of other women in the class

Number of other women in the class	Students responding yes or somewhat (percent)
0 - 3	82.9
4 - 5	71.6
6 or more	56.6

x^2***

This was the problem cited most often by women in the sample, indicating that women's lack of preparation in technical subjects is a major difficulty when they undertake non-traditional vocational training, particularly when they are enrolled in classes that include few other women.

C. Age

The number of problems that a student cited was apparently not affected by her age (see Table IX-7). However, the combination of age and number in the class did affect the number of problems cited.

Table IX-1. -- Number of problems of Non-traditional students, by age and number of other women in the class

Age and number of other women in the class	Number of problems (percent)	
	0 - 1	2 or more
17-19 years		
0 - 3	52.4 a	47,6
4 and over	70.3 a	29.7
20-24 years		
0 - 3	50.5 b	49.5
4 and over	66.9 b	33.1
25-29 years		
0 - 3	51.6 c	48.4
4 and over	69.5 c	30.5
30 yrs. and over		
0 - 3	63.6	36.4
4 and over	74.6 ø	25.4

ø***, a**, b*, c*

In every age group, the larger the number of women in the class, the smaller the percentage of women who had two or more problems. The distribution of the incidence of problems was almost the same for each age group. The exception was that women 30 years and over cited fewer problems than all the younger groups of women. Sixty-four percent of the older women in classes with 0-3 other women had one or no problems and 75% of the older women in classes with four or more other women had one or no problems. Considerably fewer women 30 and over cited two or more problems compared to younger women in the sample.

Analysis of Areas of Difference by Age Groups

Responses to the three problem areas cited most often by the women in the sample--Men Had Difficulty Adjusting to Women, Men Are Better Prepared, and Men Had More Technical Subjects--varied by the age of the respondents.

- More women 20-29 years old agreed that Men Had Difficulty Adjusting to women was a problem. Almost 40% of the women in this age group felt this was a problem compared to 30% of the younger (17-19 year old women) and 27% of the older (30 years and older) women.

Table IX-m. -- "Men Had Difficulty Adjusting to Women," by student response and age

Age	Response to problem statement (percent)	
	Yes or somewhat	No
17 - 19 years	29.6	70.3
20 years	38.6	61.4
21 - 24 years	39.3	60.7
25 - 29 years	39.5	60.5
30 years and over	27.1	72.9

x^{2}*

One might have expected the lower response provided by the older women, but it was less expected for the younger women in the sample. The younger women, recently out of high school, may have had lower expectations. On the other hand, this response by younger women may have been a reflection of rapidly changing mores in relationships between men and women, particularly among the young.

- More women 21 to 29 years of age, and particularly the women 25-29 years of age, felt less prepared than men by high school for their postsecondary program than both the younger women, who are recent high school graduates, and the older women who have been out of school for a longer period of time.

Table IX-n. -- "Men are Better Prepared," by student response and age

Age	Response to problem statement (percent)	
	Yes or somewhat	No
17-19 years	32.6	67.4
20 years	29.7	70.3
21-24 years	40.0	60.0
25-29 years	45.5	54.5
30 years and over	31.3	68.8

x^2*

One might expect that the younger, more recent graduates would have been better prepared, have retained more of their high school learning, and therefore, felt as well prepared as their male counterparts. However, the responses of the older group of women in the sample is less expected. The lower response perhaps reflects that the older women upon finding problems are less likely to attribute them to men's better preparation, but rather to attribute them to their own limitations.

Further study is needed to determine the specific needs of the women in their 20's, many of whom are returning to school to acquire or improve existing skills. Clearly, this subgroup differs from other groups and has not received the same attention as the younger or older women. There was only one group--the women who were 20 years old during the study--whose responses varied from the overall pattern in which 70%-78% of the women indicated the Men Had More Technical Subjects caused them a problem.

Table IX-o. -- "Men Had More Technical Subjects," by student response and age

Age	Response to problem statement (percent)	
	Yes or somewhat	No
17-19 years	70.6	29.4
20 years	58.9ø	41.1
21-24 years	75.9	24.1
25-29 years	77.5	22.5
30 years and over	71.8	28.2

ø*

Only 59% of the 20 years old cited this as a problem. It is not possible to account for why so few 20 year olds compared to women of all other ages in the sample listed Men Had More Technical Subjects as a problem. 1/

D. Effect of High School Curriculum

Among Non-traditional women, those who took a vocational education program in high school are less likely to believe that Men Are Better Prepared than women who took a general curriculum or college preparatory program (see Table IX-12). Similarly, this group of women most often responded positively to an earlier question asking them if they felt their high school had prepared them for their non-traditional postsecondary program (see Section VII, Relevance of High School Preparation and Table VII-4).

Although the differences were slight, overall, fewer women in Trade and Industrial, Technical, Agriculture (masculine intensive) and Distributive Education (neutral) high school curricula felt that men had been better prepared, through a stronger background in technical subjects, than women who had been in Health or Business curricula in high school (feminine intensive)

Table IX-p. -- "Men Had More Technical Subjects," by student response and high school curriculum

High school curriculum	Response to problem statement (percent)	
	Yes/Somewhat	No
College preparatory	74.4[a]	25.6
General education	73.5	26.5
Vocational education	64.3[a]	35.7
Vocational education		
Masculine intensive	58.8	41.2
Feminine intensive	67.0	33.0
Neutral	60.0	40.0

[a]*

E. Analysis of Problems and Difficulties in Light of National Enrollment Characteristics

In examining the differing characteristics of women enrolled in non-traditional occupational problems (whose overall definition is that, nationally, fewer than 25% of the students enrolled are women) it was realized that there are a number of distinct subsets of occupational categories within the non-traditional occupations group.

1/ The statistical probability that the response of the 20 year olds was the same as that of all other age groups combined, was caculated to be $p < .05$.

A comparison was made between women enrolled in non-traditional occupational training programs, which, according to the national postsecondary Area Vocational Technical School enrollment data, contained 0-10.0% women, and those which national enrollment data showed contained 10.1-25% women.

The analysis showed that 55% of those women in the sample who were enrolled in postsecondary subjects that nationally contain less than 10.1% women, perceived that Men Are Better Prepared, while only 24% of women in the sample enrolled in postsecondary subjects that nationally contain 10.1-25% women cited this as a problem.

Table IX-q. -- "Men are Better Prepared," by national enrollment category 1/

National enrollment category 1/	Response to problem statement (percent)	
	Yes/Somewhat	No
Non-traditional #1	55.2 [a]	44.8
Non-traditional #2	23.6 [a]	76.4

[a]***

1/ Non-traditional #1 = 0-10.0% of those nationally enrolled are women.
Non-traditional #2 - 10.1 - 25% of those nationally enrolled are women.

Characteristics of women students enrolled in the four non-traditional occupational areas containing the largest number of Non-traditional women in the sample were also separately examined. These were Supervisory and Administrative Management Occupations (OE code 14.08), Police Science Technology (16.0605), Drafting (17.13), and Law Enforcement Training (17.2802). According to national enrollment figures, 10.1-25% of the students enrolled in all four areas are women.

The patterns of responses by women in these four training categories to types of difficulties and number of difficulties encountered were similar to responses of women in all other non-traditional training classifications.

Table IX-r. -- Number of problems of Non-traditional students, by selected individual programs

Program	Number of problems (percent)			
	0	1	2	3 or more
Total	35.6	26.9	18.0	19.5
Electronic technology	15.6ø	31.3	15.6	37.5ø
Business supervisory and administration	45.1	29.4	13.7	11.8
Police science	38.6	19.7	17.3	24.4
Drafting	31.1	35.6	17.8	15.6
Law enforcement	40.9	22.0	19.7	17.3
All others	33.0	27.7	19.1	20.2

x^{2}+
No problems ø*, 3 or more ø**

One of the larger non-traditional training categories, Electronic Technology (16.0109), in which national enrollment figures show only 0-10% of the students are women, has a very different pattern of response. Only 16% of the women in Electronic Technology had no problems, whereas for the total group of Non-traditional women, 36% had no problems. Thirty-eight percent of the women in Electronic Technology had three or more problems, compared to only 20% of the total non-traditional group. Clearly there were critical differences within the total non-traditional category which warranted further exploration before the specific problem facing women in non-traditional occupational training could be adequately assessed.

In addition to subdividing occupational subjects in the non-traditional classification by the percentage of women enrolled nationally, it is also possible to subclassify the non-traditional category by the degree to which the individual occupations have been stereotyped as "masculine" by society. The non-traditional occupations with only 0-10.0% women enrolled nationally, can be further divided into occupations which have a masculine image and those which, although their enrollment is predominantly male, carry a "neutral" image as far as society views of the sex that "should" be employed in them is concerned. Among these are many new and emerging occupations. These occupations have not yet established traditional sex identities, although in terms of actual proportions of women enrolled, they are classified as "non-traditional."

To permit a comprehensive analysis of the women in non-traditional occupational training programs, the data were analyzed using the following classifications:

1. All Non-traditional women (those in occupational training programs where nationally 0-25% of the students are women).

2. Non-traditional women, #1 (those in occupational training programs where nationally 0-10.0% of the students are women).

3. Non-traditional women, #2 (those in occupational training programs where nationally 10.1-25% of the students are women).

4. Non-traditional women, #1A (those in non-traditional #1 programs that provide training for occupations with a "masculine" image).

5. Non-traditional women, #1B (those in non-traditional programs that provide training for occupations with a "neutral" image).

(For detailed training classifications in each group [#1-5] see Table IX-16.)

The data on problems and difficulties of non-traditional women were then subclassified using the categories listed above.

Table IX-s. -- Problems of Non-traditional students, by non-traditional category and type of problem

Problem statement	Non-traditional category and percent responding yes or somewhat to problem statement				
	Total	Non-traditional #1			All other non-traditional (Nt - #2)
		Total	Nt - #1A (masculine)	Nt- #1B (neutral)	
Men had difficulty adjusting to women (x^{2**}) 1/	33.9[a]	39.9	49.1[a]	34.7	31.6
Teachers had difficulty adjusting to women (x^{2***})	23.3[b]	31.4	38.5[b]	27.4	19.1
Teachers gave men more attention	14.6	12.7	11.8	13.3	16.3
Counselors gave men more attention	10.6	10.3	14.3	8.1	10.4
Teachers expect more of women	20.9	15.1	18.2	13.4	24.5
Men are better prepared (x^{2***})	35.4[c]	55.2	67.3[c]	48.5	23.6
Men had more science	22.5	23.9	21.6	25.9	24.2
Men had more math	23.5	25.7	25.3	25.5	25.4
Men had more technical subjects (x^{2***})	71.1[d]	84.9	88.9[d]	82.3	60.4

a^{**}, b^{***}, c^{***}, d^{***}

1/ x^2 for (Nt #1A, #1B, and #2).

Results of this analysis show the following:

a. Men Had Difficulty Adjusting to Women as a problem, was more frequent among Non-traditional women #1 (40%) than among Non-traditional women #2 (32%), but even more frequent among Non-traditional women #1A (49%) who were in classes with a masculine image. Women in the more neutral-imaged non-traditional #1B classes had this problem less often in a pattern which is more similar to that of Non-traditional women #2.

b. Teachers Had Difficulty Adjusting to Women as a problem occurred more frequently among Non-traditional women #1 (31%) and even more often among Non-traditional women #1A (39%) than among Non-traditional women #2 (19%). The percentage of women in neutral-imaged non-traditional #1B classes (27%) also gave this as a problem more frequently than Non-traditional women #2.

c. Like all other Non-traditional women, women in the masculine-imaged Non-traditional #1A classes felt that Men Had Difficulty Adjusting to Women was more of a problem than Teacher Had Difficulty Adjusting to Women. However, overall, women in non-traditional #1A classes had more difficulty with both Men and Teachers Adjusting than other Non-traditional women, and the percentage of Non-traditional #1A women who had experienced Teachers Adjusting to Women as a problem (39%) exceeds the percentage of all Non-traditional women who experienced Men Adjusting to Women as a problem (34%).

d. There is little difference among women of the various Non-traditional classifications in the extent to which they cited Teachers and Counselors Gave More Attention to Men, Teachers Expect More from Women, Men Had More Math and Men Had More Science as problems.

e. The contrast between Non-traditional women #1 and Non-traditional women #2 is greater on the problem that Men Are Better Prepared than for any other issue. The frequency of Men Are Better Prepared as a problem was 31 percentage points higher for group #1, than for Non-traditional women #2. The incidence of this problem was 44 percentage points greater among women in masculine-imaged #1A programs and 25 percentage points greater among women in neutral-imaged #1B programs than Non-traditional women #2.

f. While the percentage of all Non-traditional women who had cited Men Had More Technical Subjects as a problem was very high (71%), the percentage of Non-traditional #1 women citing this problem (85%) is considerably higher still. Among Non-traditional #1A women, 89% cited this as a problem while among Non-traditional #1B women 82% cited this problem. Sixty percent of Non-traditional #2 women cited Men Had More Technical Subjects as a problem, 25 percentage points fewer than among women in the Non-traditional #1 group; but it is still the most frequently cited problem for the Non-traditional #2 women.

On the basis of this analysis, we reach the following tentative conclusions:

- Women enrolled in masculine-imaged, non-traditional occupational training programs encounter more difficulties and problems.
- Women enrolled in masculine-imaged, non-traditional occupational training programs have more difficulties with fellow male students and male teachers adjusting to them.
- Women in non-traditional but neutral-imaged occupations have fewer problems and difficulties than women in masculine-imaged occupations.
- Women in masculine-imaged occupations need special support. Work will have to be done to improve the climate in which they are learning and to improve their preparation in order for them to feel capable of performing what will inevitably be difficult tasks under extremely difficult circumstances.

X. Employment of Students

A. Employment by Urban/Rural Location

This section examines the extent to which the students in the sample were employed while attending school. Characteristics of the employed students are analyzed. The students who were working were also asked if their jobs were related to the occupations for which they were training and whether or not the school had helped them to get their job. Non-traditional women were asked if they felt that it was easier for men in their classes to get training-related jobs.

Proportionately more Non-traditional women (58%) than Traditional women (47%) were employed. The difference between urban Non-traditional women, 61% of whom were employed, and urban Traditional women, 50% of whom were employed, was particularly significant. The difference, however, between rural Non-traditional women, 51% of whom were employed, and rural Traditional women, 42% of whom were employed, was less significant.

Table X-a. -- Student employment by urban/rural location

Location	Percent employed	
	Non-traditional	Traditional
Urban ***	60.5[a]	49.9
Rural	50.5[a]	42.1
Total***	58.0	47.3

[a]*

In the case of both Non-traditional and Traditional women, more urban women were employed than rural women. This might be due to the relatively fewer employment opportunities for women in rural areas. There are increasing indications, however, that the movement of industry into rural areas in the United States is increasing employment opportunities for both men and women. What the implications of this movement might eventually be for women in vocational training is not clear and cannot be determined from the data in this study.

B. Age

Overall, more Non-traditional than Traditional women were employed while they were enrolled in postsecondary vocational education programs. Important differences exist by age, however. Among Non-traditional women, more younger women were working. Forty-eight percent of Non-traditional

women who were 30 years old and over were employed, while about 60% of Non-traditional women less than 30 years old were employed.

Table X-b. -- Student employment, by age

Age	Percent employed	
	Non-traditional	Traditional
17-19 years ***	59.1	51.8
20 years	66.0	53.8
21-24 years	60.1	44.7
25-29 years	59.1	44.0
30 years and over***	48.0ø	30.2ø

Trad x^{2}**, Nt ø**, Trad ø***

As has been noted in an earlier section, many of the Non-traditional women who are in their twenties had entered vocational training in order to improve their working skills. This fact, combined with the data on Non-traditional women, suggests that many women under 29 who entered non-traditional training had been stimulated to do so through experiences in their current jobs which led them to want to acquire new skills and/or to change their occupations. More Non-traditional women who were over 30, on the other hand, are likely to be returning to the labor force after a period of absence and are seeking training prior to seeking employment.

Among Traditional women a larger percentage of younger women were employed than older women. The group with the lowest percentage employed were the Traditional students 30 years old and over. Unlike the Non-traditional students, fewer Traditional women 21-29 years old were employed (about 44%) than were women 17-19 years of age (about 52%).

C. Income

An analysis of the percent of students employed by household income indicates that the higher the income, the more likely it is that the women students are employed. At all income levels, more Non-traditional women were working. The percentage point difference between Non-traditional and Traditional students who are employed is lowest among women whose household incomes were $5,000 a year or less, where there was only a 4 percentage point difference between the percentage of Non-traditional and Traditional women working. The difference in percentages of Non-traditional and Traditional women working increases to more than 10 percentage points among women whose families had incomes over $5,000 a year.

Table X-c. -- Student employment, by household income

Household income (annual)	Percent employed	
	Non-traditional	Traditional
$0-5,000	43.9[a]	39.7
$5,001-10,000	58.0[a]	46.9
$10,001-15,000*	56.8	43.8
$15,001 and over*	60.5	50.3

Nt x^{2}*, a*

The fact that families in which the women students are working tend to have higher level incomes might be expected. At the same time, however, the families of many students who were not working were also in the higher ranges. The data confirm the fact that many women are working to establish careers rather than simply responding to financial needs in the family.

D. Employment in Related Occupations

Although a greater percentage of Non-traditional women are employed, more Traditional women are employed in occupations related to their area of study than Non-traditional women. Sixty percent of women employed in traditional occupations compared to 48% of women employed in non-traditional occupations have jobs related to their programs of study.

Table X-d. -- Relationship of job to training

Job is related to study	Employed students (percent)	
	Non-traditional	Traditional
Yes**	48.3	59.6
No	51.7	40.4

Research has indicated that the learning experience of the students in their on-the-job training is an important asset to overall skill development. Thus, although Non-traditional women are more likely to be employed, they are less likely to be employed in jobs that are related to what they are studying, and therefore, are losing the advantages that come with a training-related job.

An analysis of students employment by their area of study indicates that among Non-traditional women, those enrolled in distributive and business courses are more likely to be employed than those enrolled in trades and industrial, technical or agricultural programs (See Table X-6.)

Another issue that emerges is the finding that few women who are studying in programs within the agriculture, technical and trade and industrial areas are employed in related areas. Only 42% of the women enrolled in non-traditional programs in these three occupational areas were employed in a job related to their area of training. These statistics suggest that an effort should be made to improve job placement for Non-traditional women who are studying in these occupational areas. (See Tables X-7.)

All Non-traditional women in the survey sample were asked if they felt it was easier for men students to find a job which related to their area of training. Of those women who responded yes or no, 1/ over half (55%) indicated that they felt it was easier for men to find such jobs (See Table X-8). The perception of Non-traditional women that it is easier for men to obtain related work experience was lowest among Non-traditional women enrolled in distributive and business occupations (41%), and highest among women in trades and industrial and technical occupations (57%) (See Table X-9). These perceptions relate to earlier findings that women in distributive and business occupations were (a) more likely to be employed and (b) more likely to be employed in related occupations than women in other occupations.

E. Role of School in Job Placement

Overall, schools assisted a rather small percentage of women in the sample to obtain their jobs. Thirty-four percent of the employed Traditional women in the sample received help in job placement from their schools while only 24% of the employed Non-traditional women in the sample received help in job placement from their schools.

Table X-e. -- School assistance in job placement

School helped place student	Student response (percent)	
	Non-traditional	Traditional
Yes**	24.0	34.2
No	76.0	65.8

The fact that the schools had better success with placing Traditional women in related jobs than it had in placing Non-traditional women in

1/ Sixty-three percent of the responses to this question were "don't know".

related jobs suggests that the schools have not invested the effort in placing Non-traditional women. Existing evidence shows that employers are ready to place women in male-intensive non-professional occupations if they are adequately prepared in order to meet governmental pressure for affirmative action. Women enrolled in courses to acquire these skills are as well prepared as the men in their courses. Organizing and gaining support for the placement of women in non-traditional occupations may take more effort by the school, but based on the experience of the Traditional women, it is clearly worth the effort.

For both Non-traditional and Traditional women, 20 year olds and 21-24 year olds found the schools most helpful in terms of job placement assistance. Women who were least often helped by their schools in job placement were Non-traditional and Traditional women 30 years old and over.

Table X-f. -- School assistance in job placement, by student age

Age	School helped place student (percent)	
	Non-traditional	Traditional
17 - 19 years**	22.3	34.5
20 years	31.8	39.0
21 - 24 years	33.0	42.2
25 - 29 years	21.3	33.3
30 years and over	13.9ø	15.4ø

Nt x^2*, Nt ø***, Trad ø*

Overall, at every age group except women 30 and over, many more Traditional women than Non-traditional women were assisted by the schools in job placement. In the older group, few schools helped either the Traditional or the Non-traditional women.

In all cases where the school helped find the job, it was more likely that the work was related to what the woman was studying. However, there is a marked difference in the percentage of Traditional women and Non-traditional women who were placed in related jobs by the schools.

Table X-g. -- School assistance in job placement, by relationship of job to training

Job is related	School helped place student	
	Non-Traditional	Traditional
Yes **	66.1 a	84.4 b
No	33.9	15.6
	School did not help place student	
Yes	42.9 a	46.5 b
No	57.1	53.5

a***, b***

While the school placed 84% of the Traditional women in related jobs, they placed only 66% of the Non-traditional women in related jobs. The importance of the school's assistance is substantiated by the fact that only 43% of the Non-traditional women and 46% of the Traditional women who found their own jobs were able to find jobs related to their area of study, whereas only a small percentage of Non-traditional women (16%) and Traditional women (13%) who were employed in jobs that were <u>not</u> related to their area of training had been so placed with the assistance of their schools. (See Table X-13). The school was able to find twice as many related jobs for Non-traditional women than the students were able to find. Thus, while 60% of the employed Traditional women and only 48% of the employed Non-traditional women were working in jobs related to their area of training, the difference between the two groups is due largely to the higher percentage of Traditional women who were assisted by their schools to find their jobs.

In summary, these findings suggest that job development in training-related areas, an important service that some schools provide, has benefited proportionately more Traditional students than Non-traditional students. More schools should undertake these programs either independently or in coordination with a placement office. When such a program is undertaken, equal emphasis should be given to the development of jobs for women in non-traditional and traditional training.

XI. Alternative Occupations Considered by Women

To assist women in making occupational choices and to expand their choices, it is necessary to understand the process by which students who have already chosen to enter non-traditional or traditional occupational training programs decided to enroll in these programs. To do this, it is useful to examine the range of occupations that women first considered before making their choices. Accordingly, the students in the sample were asked if they had seriously considered any occupations other than the one for which they were presently training, and if so, to identify their alternative occupation. The responses are examined by (a) the extent to which women had considered any alternative occupations, and (b) the typology of these alternative occupations.

A. Whether Alternative Occupations were Considered

Overall, more Non-traditional women (73%) than Traditional women (67%) had considered alternative occupations. These differences, however, and differences by age group were very small.

Table XI-a. -- Consideration of alternative occupations

Considered alternatives	Non-traditional	Traditional
	(percent)	
Yes*	72.6	67.4
No	27.4	32.6

The largest percentage of women who considered alternative occupations were Non-traditional women 21-24 years of age, 81% of whom had considered alternative occupations. Traditional women 30 years of age and over identified an alternative occupation least often; 60% of the women in this group had considered another occupation. (See Table XI-2.)

As has been noted, the characteristics of parents have not been a significant factor in the occupational choices of students. However, a relationship between mothers background and students choice of alternative occupations was noted in the study findings. Non-traditional women whose mothers were in low status white collar occupations (sales and clerical workers--the most traditional of all occupational areas) considered alternative occupations more often (79%) than did Non-traditional women whose mothers were of any other occupational status. (See Table XI-3.) Among Traditional women too, those whose mothers had worked in low status white collar occupations considered alternative occupations most often (69%).

The extent to which Traditional students considereed alternative occupations varied slightly by the amount of education their mothers had had. Traditional women whose mothers had had 13 or more years of school were more apt to consider alternative occupations (73%) than those whose mothers had had less than 13 years of education (64%). The same pattern existed among the Non-traditional students, although the differences were smaller. (See Table XI-4.)

The factor which apparently most affected whether or not students had considered alternative occupations was the type of high school curriculum they had taken. Women students, both Traditional and Non-traditional, who had been in a college preparatory program in high school considereed alternative occupations significantly more often than did women students who had been enrolled in general education or vocational education curricula in high school.

Table XI-b. -- Considered alternative occupations, by high school curriculum

High school curriculum	Non-traditional	Traditional
	Students did consider alternative (percent)	
College preparation***	82.8	71.3
General education	66.3	66.5
Vocational education	66.5	65.2

Nt x^2***

While 83% of Non-traditional women and 71% of Traditional women who had been in college preparatory programs considered alternatives, only about 66% of all other Non-traditional and Traditional students considered alternative occupations.

There is some difference in response among those students who were in vocational education programs in high school. (See Table XI-5.) Non-traditional students who were in Trade and Industrial, Technical, Agricultural and Distributive training in secondary school considered fewer options than other groups. This was only to be expected since they were the ones who had most likely selected their area of training while in high school and had not changed between high school and postsecondary school.

It is also significant that there is no difference in the percentage of women who considered alternative occupations by the extent to which they considered counselors to be influential. (See Tables XI-6 and XI-7.) These data suggest that counselors are not effectively encouraging women to consider alternatives.

In summary, Non-traditional women are somewhat more likely to consider alternative occupations than Traditional women, and women who had been enrolled in college preparatory curriculum in high school were somewhat more likely to consider alternative occupations than women who had been enrolled in general education or vocational education curricula.

B. Types of Occupations Considered

While there are few vivid contrasts in whether or not the women students considered alternative occupations, there are large differences in the typology of occupations which women did consider.

To develop the typology, all alternative occupations which the women identified were classified by the percent of women nationally participating in their employment in 1974. Those occupations in which 25% or less of those employed were women were designated as non-traditional alternatives, those in which 25.1% to 75% of the employed were women were designated as mixed alternatives, and those occupations in which 75.1% to 100% of those employed were women were designated as traditional occupations. In a few instances, the students did not list a specific occupation, and some only listed a general field of study. These responses were classified as "undetermined" unless the entire field was of one particular typology. 1/

Among those responses where an alternative occupation could be classified, the distribution of alternative occupations considered by Non-traditional women was nearly equal. Thirty-one percent of Non-traditional women considered other non-traditional occupations, 36% considered mixed occupations, and 34% considered traditional occupations. Traditional women, on the other hand, considered other traditional occupations most often (48%), mixed occupations next (40%), and non-traditional occupations least often (13%), thus showing a marked preference for traditional and mixed occupations.

Table XI-c. -- Typology of alternative occupations considered by students

Typology of alternative	Non-traditional	Traditional
	(percent)	
Non-traditional alternative	30.8	12.6
Mixed alternative	35.6	39.5
Traditional alternative	33.6	47.8

x^{2***}

If all traditional women in the sample are considered, including those who considered no alternative, 8% of all Traditional women seriously considered a non-traditional alternative. (See Table XII-x.) If one extended this to all women enrolled in traditional training in AVTS nationally, this would represent 29,000 women who might possibly have selected a non-traditional occupation had they received some encouragement. This group alone would nearly double the number of women in training for non-traditional occupations. (See also Section XII, Mixed Women.)

1/ Of all responses, 5.2% of the students in training in non-traditional areas and 5.2% in traditional areas did not identify a specific occupation.

The pattern by which Non-traditional and Traditional women select non-traditional, mixed or traditional alternative occupations varies by age groups.

Table XI-d. -- Typology of alternative occupations, by age

Age and alternative	Non-traditional	Traditional
	(percent)	
17-19 years		
Non-traditional	37.8	12.9
Mixed	39.8	33.5
Traditional	32.4	53.5
20 years		
Non-traditional	26.2	15.7
Mixed	36.9	35.3
Traditional	36.9	49.0
21-24 years		
Non-traditional	31.1	11.9
Mixed	34.9	49.3
Traditional	34.0	38.8
25-29 years		
Non-traditional	21.4	6.7
Mixed	51.2	50.0
Traditional	27.4	43.3
30 years and over		
Non-traditional	26.1	13.3
Mixed	34.1	44.4
Traditional	39.8	42.2

Nt x^{2}*

Non-traditional women 25 years of age and over considered other non-traditional occupations slightly less often than younger Non-traditional women; and Traditional women 21 years of age and over considereed other traditional occupations less often than younger Traditional women.

Table XI-e. -- Typology of alternative occupations, by selected age groups

Non-traditional students	
Age 17 - 24	
Non-traditional alternative	33.7
Mixed alternative	32.6
Traditional alternative	33.7
Age 25 and older	
Non-traditional alternative	23.8
Mixed alternative	42.4
Traditional alternative	33.7
Traditional students	
Age 17 - 20	
Non-traditional alternative	13.6
Mixed alternative	33.9
Traditional alternative	52.5
Age 21 and older	
Non-traditional alternative	11.3
Mixed alternative	47.9
Traditional alternative	40.8

Nt x^{2}*, Trad x^{2}*

Older Non-traditionals (25 and over) and Traditionals (21 and over) not only selected non-traditional and traditional occupations, respectively, less often, but both groups also generally considered occupations of the mixed category more often than younger women. Forty-eight percent of Traditional women 21 years of age and over and 42% of Non-traditional women 25 years of age and over listed mixed occupations as alternative choices. Younger women in the sample were more likely to have considered as alternatives other occupations in their own categories, e.g., more younger Non-traditional students selected non-traditional alternative occupations and more younger Traditional students selected traditional alternative occupations.

The earlier analyses of characteristics of women 21 - 29 years of age in this sample have shown that for women in this age group, desire to change or improve work skills is an important factor in their decision to choose their particular type of training (see Chapter VIII, Motivational Factors) and that many of the women in this age group were presently working (see Chapter X, Employment). Given these characteristics, the higher proportion of women in their 20's who had considered mixed occupations as alternatives and the lower proportion of women in their 20's who had considered occupations in their own categories as alternatives might reflect (a) their labor market experience,

(b) better information from work experience enabling them to consider a fuller range of choices, and (c) more knowledge of mixed occupations, some of which are newer occupations and are less likely to be known to students directly out of high school.

These findings suggest the need for special programs for women in their 20's who are considering an occupational shift. Women in this age group are most likely to be overlooked by programs presently being offered which include standard programs for young women leaving high school and special programs for older women re-entering the labor force. Statistics on women's occupational patterns, however, point to a marked increase in the labor force participation rate of women 20-29 years of age in the labor force. 1/ Sixty-two percent of this age group are presently in the labor force, suggesting that these women are staying in the labor force and are apparently interested in exploring new occupational opportunities.

1/ Sixty-six percent of women 20-24; and 57% of women 25-29 years of age are in the labor force. Source: Women's Bureau, Department of Labor, 1975.

XII. Women in Mixed Vocational Training

A. Background

According to national data on AVTS enrollment, there are 51 occupational programs where 25.1% to 75.0% of the students enrolled were women. 1/ These programs are neither traditional nor non-traditional and are being called mixed vocational training programs.

The women enrolled in mixed training programs represented 29% of all women in the postsecondary AVTS sample. (63% of the women were training for traditional occupations and 9% were training for non-traditional occupations.) (See Appendix, Table A-2 for a list of the mixed occupations.)

National enrollment data show that 25% of all students--men and women--enrolled in postsecondary AVTS programs were in mixed categories (28% were enrolled in traditional occupations and 47% were enrolled in non-traditional programs). 2/ Of all the students in the 51 mixed occupational programs combined, 42% were women and 58% were men.

Even in the mixed category, the majority of the students were men. This occurs because men are the majority of students in the six mixed training programs that have the largest total enrollment. Men are the majority in most of the mixed training programs and they dominate in 32 of the 51 mixed programs nationally.

1. Rationale for Analyzing Mixed Occupations

In recent years, an effort has been made to encourage young women to move from training for traditional occupations to training for non-traditional occupations. Except at the professional level, however, this effort has met with only minimal success. The 1974 national AVTS data indicate that women represented only 8% of the students training for non-traditional occupations. Those students who were in non-traditional programs (60%) were mostly clustered in only four programs--police science, law enforcement, drafting, and business supervision and administration. These data from the current study show the continuation of this clustering trend; 52% of the Non-traditional students in the sample were in those same four programs.

Among women in the sample, two-thirds who were in traditional programs and three-fourths who were in mixed programs had considered alternative occupations. Only 13% of the Traditional women and 16% of the Mixed women, however, ever seriously considered entering an occupation that was non-traditional. There is no question that young women's own perceptions have been a major obstacle to their movement into the non-traditional occupations. Until the barriers created by the schools and the women themselves are removed, there is little likelihood that rapid movement of women into non-traditional training will occur.

1/ 1974 Office for Civil Rights, DHEW, Survey of AVTS schools.
2/ Ibid.

When young women are encouraged to undertake training for non-traditional occupations, they may lack confidence in their ability to break the career barrier; they may hesitate because they perceive certain occupations as "unwomanly." They may seek to avoid the potential for conflicts that may arise, during training or on the job, in their relationships with men and/or their families. These perceptions are a result of the impact of social mores and society's role assignment which create psychological and social constraints that affect women's career decision-making. Most young women have not reflected on any alternatives beyond those which society has traditionally defined as acceptable for women; non-traditional jobs are generally not viewed as options. Without question, the range of possible approaches to women's career decisions must be examined if personal and societel influences are to be overcome and women are to make rational, bias-free occupational choices.

One finds that of those few women who have moved into non-traditional jobs in recent years, many are adult women who are returning to the labor force or are already employed and changing occupations. A lack of role models and the difficulty of adjusting to an all-male environment are not the only factors which prevent many young women from entering non-traditional occupations. Young women who are in high school or about to enter postsecondary education are at an age when they are most likely to be insecure about their self-image and femininity. Late adolescence is perhaps the most difficult time in a young woman's personal development for her to decide to undertake an occupation that is decidedly non-traditional. If the choice of a non-traditional occupation is delayed until after childbearing, when the older woman returns to the labor market, the problems of self-image and identity are often outgrown, but the woman's delayed entry into a non-traditional occupation is likely to be expensive and time-wasteful. She is at a disadvantage because of her later entry into the non-traditional occupation.

Most of the effort up to the present has been to convince women to enter areas of employment that are not only non-traditional (i.e., have less than 25% women), but which are also stereotyped as "masculine" by society. These tend to be such areas as construction apprenticeship, auto mechanics, and other similar occupations that are firmly fixed as "men's jobs." There are many other often overlooked areas of employment, however, which do not carry either a "masculine" or "feminine," image, in part because they are new areas of employment which have not yet taken on a sex identification. 1/ Women entering these occupations would not face the problems of sex-stereotyping and overcoming traditional attitudes that exist for women entering "masculine" imaged occupations.

1/ For a more complete explanation, see Chapter I, Introduction.

It is therefore suggested, that rather than strongly emphasizing that women move from "feminine" jobs into "masculine" jobs, women be encouraged to move into "neutral" occupations that are free of sex stereotypes as an intermediate step. Such occupations need greater participation by women since they are mixed or non-traditional in terms of women's present participation. A movement into these areas will permit women to gradually overcome their reluctance to enter training for "masculine" occupations.

Data from our study (see Chapter XI, Alternative Occupations) indicate that a large number of women in the three training groups--Non-traditional, Mixed, and Traditional--considered entering training for a mixed occupation at a rate much higher than the rate at which women are enrolled in training for mixed occupations in AVTS. In 1974, 29% of the women in AVTS were enrolled in mixed occupational training programs. Sample data indicate that 40% of the Traditional women who seriously considered an alternative occupation considered entering a mixed occupation. Thus, there is no lack of women who, perhaps with a little more information, support and encouragement, might be willing to enter mixed occupations.

Because there exists a potential for developing a different strategy to move women away from traditional occupations, we have undertaken this preliminary analysis of the characteristics of women in mixed occupational training and the issues that are related to their career decision-making.

2. Nature of the Analysis

While the number of women in the mixed sample was large enough for the overall characteristics of the mixed group to be determined, a further breakdown of the group by two or more variables resulted in cells that were small and of little statistical significance. The characteristics of women in the mixed group, it was found, often fell about mid-way between characteristics of Non-traditional and Traditional women. There was often no statistically significant difference in the characteristics of Mixed women and women in either of the other two groups on particular variables, although the differences between Traditional and Non-traditional women on those same variables were significant.

Because of the limited size of the sample, we have not tested for the statistical significance of differences in characteristics between Mixed women and women in either of the other two training categories. Nor have we tested significance of variations within the group itself. Instead, we offer the data in this section as tentative findings which, because of the consistent nature in which women in mixed occupational training programs are shown to different from women in both non-traditional and traditional programs, suggest the need for further and more detailed investigation of this group.

We are attempting here only to set out the issue of how attention to opportunities in mixed training might help women to move away from their present overconcentration in traditional occupational programs, and open a new, challenging, and we believe, fruitful area offering promise in assisting women to overcome traditional perceptions of women's education and

employment. The fact that the mixed group represents nearly a third of all women training in postsecondary AVTS lends further weight to our contention that further analysis of this population is needed.

3. Types of Mixed Occupations

Thirty-one of the 51 occupational programs which comprise the mixed category were represented by women in the control sample. Programs in each of the seven broad vocational education categories were included. Fifty-two percent of the women in the mixed sample were training for Business occupations and 25% were training for Distributive occupations.

The distribution by broad classification of mixed students in the study sample generally matches the distribution of women nationally who are in mixed training in postsecondary AVTS programs:

Table XII-a. -- Distribution of women in mixed occupational training in the sample and in national enrollment, by broad classification of study

Classification of study	Distribution of women in mixed occupational training (percent)	
	National	Survey sample
Agriculture	1.4	1.5
Distributive	16.5	24.6
Health	14.6	9.7
Home economics	3.1	2.4
Business	44.3	51.8
Technical	7.8	3.3
Trades and industrial	12.4	6.6

While the survey sample contains a somewhat smaller percentage of students in Trade and Industrial and in Health and a somewhat larger percentage of students in Business and Distributive, the sample profile is generally representative of women in mixed programs nationally. A further examination of the characteristics of the Mixed women is certainly needed, but on the basis of this study, preliminary characteristics can be defined and some hypotheses can be derived.

B. Demographic Characteristics of the Mixed Sample 1/

With few exceptions, the demographic characteristics of the Non-traditional and Traditional students were quite similar. In those instances where the characteristics differed significantly, the characteristics of the Mixed women tended to be more like the Traditional women than the Non-traditional women overall. In areas other than demography, however, involving issues of women moving away from traditional behavior, or insti-

1/ See Volume II, Chapter III, Tables 1 - 13.

tutions responding negatively toward non-traditional behavior, Mixed women tended to be more like Non-traditional women.

1. Geographic Location

A higher percentage of Traditional and Mixed women were located in rural areas than were Non-traditional women, although the percentage for the Mixed was slightly less than that for the Traditionals.

Table XII-b. -- Urban/rural location of students

Location	Students (percent)		
	Non-traditional	Mixed	Traditional
Urban	75.7	68.8	66.7
Rural	24.3	31.2	33.3

2. Age

The age distribution of Mixed women is similar to the age distribution of Traditional women, both groups having proportionately more young women and fewer older women than the non-traditionals.

Table XII-c. -- Age distribution of students

Age	Students (percent)		
	Non-traditional	Mixed	Traditional
17-19 years	35.2	44.5	46.2
20 years	12.9	16.1	13.3
21-24 years	17.7	16.5	17.5
25-29 years	15.7	8.5	8.4
30 years and over	18.5	14.4	14.6

Findings from an earlier section (see Section IX, Problems and Difficulties) suggest that older women are better able to adjust themselves to non-traditional occupations than younger women. This factor may explain why there were fewer young women 25 and under in the Non-traditional sample (66%) than in the Mixed (77%) or Traditional (77%) samples.

3. Race

The racial/ethnic distributions of women in each of the three groups were quite similar.

Table XII-d. -- Racial/ethic distribution of students

Racial/ethnic group	Students (percent)		
	Non-traditional	Mixed	Traditional
White	84.8	88.2	86.7
Minority	15.2	11.8	13.3
Black	9.9	9.3	9.5

4. Characteristics of Parents

There is very little variation in characteristics of the parents among any of the three groups. Slightly more of the Mixed and Traditional women have mothers who have never worked than do the Non-traditional women; otherwise, the parents employment characteristics of Mixed women were similar to those Traditional and Non-traditional women. A slightly higher percentage of Mixed students mothers and fathers were high school graduates than either of the other two groups, but the overall educational profiles of the parents were quite similar.

5. Income

The income profile of Mixed women is similar to that of Non-traditional women. More family incomes are concentrated at either end of the spectrum; there are more families who are poor and more families who are well-to-do compared to the Traditional women. Like the households of the Non-traditional women, households of Mixed women are less commonly in the middle income ranges.

Table XII-e. -- Household income of students

Household income	Students (percent)		
	Non-traditional	Mixed	Traditional
$0-5,000	15.9	15.9	12.0
$5,001-10,000	19.9	20.8	20.2
$10,001-15,000	20.3	18.9	28.5
$15,001 or higher	43.8	44.4	39.3

C. Analysis of Influential Persons 1/ and Events

1. Non-School Persons

Women in the sample were asked if certain persons outside of school, including Mother, Father, Husband, etc., had been influential in their career choice. In almost all cases, the percentage of women who identified specific "significant others" as being influential was midway between the percentage of Traditional and Non-traditional women who identified such persons as being influential.

Table XII-f. -- Importance of family and friends in influencing students selection of training

Influential persons	Percent responding person was important		
	Non-traditional	Mixed	Traditional
Mother	50.3	59.7	72.8
Father	44.3	53.1	56.2
Husband	46.0	50.3	58.2
Men friends	43.1	45.2	39.7
Women friends	44.1	52.4	54.7
Men relatives	25.5	22.6	23.3
Women relatives	24.1	27.4	38.7

Only the percent of Mixed who were influenced by male friends was slightly higher. Forty-five percent of Mixed women, 43% of Non-traditional women and 40% of Traditional women were influenced by male friends.

2. School Personnel

Responses on the relative influence of school personnel were analyzed by school level--secondary and postsecondary, by the sex of the influential person, and their role in school--teachers, counselors, other school personnel.

Mixed women, like the Non-traditional women, are influenced more by men school personnel than by women school personnel, but the difference in influence between men and women is much smaller for the Mixed (5 percentage points) than for the Non-traditional women (14 percentage points). Traditional women, on the other hand, are more greatly influenced by women school personnel than men (with a difference of 10 percentage points).

1/ See Volume II, Chapter V, Tables 1 - 20.

Table XII-g. -- Influence of men and women school personnel on student choice of training

School personnel grouped by sex	Students considering one or more persons in the group influential (percent)		
	Non-traditional	Mixed	Traditional
Men	50.7	52.7	48.5
Women	37.1	48.5	58.3

At the postsecondary level Mixed women found teachers and counselors about equally influential in the case of both men (27%) and women (22%). At the secondary level, Mixed women found women teachers more influential than women counselors, but they found men teachers and counselors to be of about equal influence. Overall, Mixed women found men and women school personnel to be of about equal influence at the secondary level, while at the postsecondary level, the Mixed women tended to find men school personnel more influential than women school personnel.

Table XII-h. -- Importance of school personnel in influencing students selection of training, by school level, position, and sex of influential person

Influential school personnel	Percent responding person was important		
	Non-traditional	Mixed	Traditional
Teachers			
Senior high men	24.9	28.3	28.8
Senior high women	17.7	30.5	38.2
Post high men	31.9	26.9	23.4
Post high women	17.6	21.7	33.8
Counselors			
Senior high men	18.8	25.7	26.3
Senior high women	16.2	23.9	30.2
Post high men	24.8	26.8	22.4
Post high women	15.2	21.5	26.5

3. Most Important Event 1/

Students were asked if an important event had influenced their choice of training. Interestingly, many of the events cited were negative ones such as unsuccessful job seeking effort, dissatisfaction at another job, need to provide financial support, and a change in family situation (generally associated with financial problems).

1/ These data were not separately analyzed in an earlier analysis because there were no significant differences between Non-traditional and Traditional women.

Table XII-i. --Most important event influencing students in selection of training

Most important event	Student response (percent)		
	Non-traditional	Mixed	Traditional
Previous exposure to tasks	36.9	29.8	38.1
Need to provide financial support	5.2	8.1	8.8
Unsuccessful job seeking	4.2	7.3	4.8
For advancement	12.4	10.5	10.2
Dissatisfaction elsewhere	10.5	13.7	10.2
Wanted skill	7.2	6.5	10.9
Family situation changed	8.5	11.3	8.8
Aware of women's opportunity	4.6	1.6	0.0
Others	10.5	11.3	8.2

These events represented 40% of those reported by women training in mixed occupations, compared to 28% and 33% for the Non-traditional and Traditional students, respectively.

It is also noteworthy that a smaller percentage of Mixed (30%) than either the Traditionals (38%) or Non-traditional (37%) were influenced in their training selection by a positive experience based on previous exposure to the tasks performed. This suggests that fewer of the Mixed women are changing jobs within a particular employment area. It also suggests that fewer Mixed women were exposed in high school to the occupational skills needed for their present training.

D. Impact of Counseling Methods and Techniques 1/

Mixed women found most counseling techniques more useful than Non-traditional women, but less useful than Traditional women. Only one counseling technique, job site visitations, was considered less useful by Mixed women (44% important) than either Non-traditional women or Traditional women (48% and 55% respectively). This is in accord with the low response of Mixed women to previous exposure to tasks as the most important event which influenced their decision.

1/ See Volume II, Chapter VI, Tables 1 - 21.

Table XII-j. -- Importance of methods of counseling and career information programs in assisting selection of training

Programs	Percent responding program was important		
	Non-traditional	Mixed	Traditional
Individual counseling	49.8	56.2	59.0
Group counseling (men and women)	20.7	20.8	24.2
Group counseling (women only)	18.3	17.7	27.6
Career education	42.7	51.3	59.3
Career orientation	35.2	41.2	50.5
Job site visits	47.6	44.0	54.6
Industrial representative visit	33.3	33.2	37.9
Vocational testing	34.8	39.2	42.8

The Mixed women's assessments of the various other counseling techniques seem to occupy the middle ground between Non-traditional and Traditional responses. However, where their responses resemble those of another group, they tend to be more like the Non-traditionals in response than like the Traditionals (e.g., group counseling and industry representatives). Only on the issue of individual counseling did the Mixed respond like the Traditionals.

On other issues about school services, such as the availability of school assistance in job placement as related to job training, responses of Mixed women either occupied the middle ground between non-traditional and traditional responses, or were more similar to non-traditional responses. This pattern would seem to suggest that the services provided by the schools are better designed to meet the needs of Traditional women than either Non-traditional or Mixed women.

E. High School Curriculum 1/

The high school education of the mixed group included a lower percentage of women in general education than either of the other two groups. However, the percentage of Mixed women in college preparatory curriculum was similar to the Non-traditional group and the percentage of Mixed in vocational education, particularly business vocational education, was similar to the Traditional women.

1/ See Volume II, Chapter VII, Tables 1 - 27.

Table XII-k. -- High school curriculum of students

High school curriculum	Students (percent)		
	Non-traditional	Mixed	Traditional
College preparatory	37.1	35.5	29.6
General education	33.5	25.9	28.5
Vocational Education	29.3	38.6	41.9
Business (percent of voc. ed. students)	54.2	68.2	72.7

1. Math and Science

Relatively more women in the Mixed group had extensive math backgrounds than either the Non-traditional or Traditional groups. Thirty-nine percent of the Mixed women had five or more courses of math compared to 34% of the Non-traditional and 29% of the Traditional women. This may reflect the fact that a high percentage of Mixed women had been enrolled in the college preparatory curriculum in high school. However, the high math background is also related to the fact that more than half (52%) of the students in mixed programs were in accounting and computing occupations and business data processing, both of which require extensive math training. Compared to Non-traditional and Traditional women, a similar proportion of Mixed women had had five or more semesters of science, but more had had three to four semesters of science.

2. High School Preparation

In the earlier analysis of high school preparation, it was concluded that Non-traditional students who in high school had relatively more math and/or science, had vocational education curricula, or had matching secondary and postsecondary vocational programs, felt relatively more prepared for their present training than other students. These variables are also being analyzed in relation to Mixed students perceptions of their high school preparation.

As we have noted, the math and science backgrounds of the Mixed sample was relatively high. The percentage of women in the Mixed sample whose high school vocational education curriculum was related to their present training was also high in comparison to the non-traditional sample though not as high as in the traditional sample. Nineteen percent of the entire Mixed sample had matching secondary and postsecondary vocational curriculum. This represented 49% of all Mixed students who had been in vocational programs in high school.

Table XII-l. -- Relationship of training in high school to postsecondary program

Relationship of training	Students (percent)		
	Non-traditional	Mixed	Traditional
Matching programs	6.2	19.0	25.8
Programs do not match	93.8	81.0	74.2

In contrast 26% of all Traditional students had matching secondary and postsecondary curricula (62% of all Traditional students who had been in vocational programs in high school), and only 6% of all Non-traditional students had matching secondary and postsecondary curricula (only 21% of all Non-traditional students who had been in vocational programs in high school).

Given these characteristics, it is not surprising that a relatively low percentage of women in mixed training programs said that high school did not prepare them at all. Thirty-five percent of Mixed women compared to 25% of Traditional women and 54% of Non-traditional women said they were not prepared.

Table XII-m. -- Preparation in high school for present program

High school did prepare	Students (percent)		
	Non-traditional	Mixed	Traditional
Yes	13.3	18.3	34.4
No	54.0	34.8	24.5
A little	32.7	47.0	41.0

What is surprising is that, although there were relatively more Mixed women than Traditional women with extensive math/science backgrounds and college preparatory backgrounds, and although there were nearly as many Mixed students as Traditional students who had had vocational education programs in high school and matching secondary/postsecondary programs, there were still relatively more Mixed students than Traditional students, who felt that high school did not prepare them adequately for their present program.

Among students with matching secondary and postsecondary vocational education programs, 19% in mixed programs and only 8% in traditional programs, said high school did not prepare them.

Table XII-n. -- Preparation in high school, by relationship of high school training to program

High school did prepare (student response)	High school training matches present program					
	Non-traditional		Mixed		Traditional	
	Match	No match	Match	No match	Match	No match
Yes	40.4	11.5	36.5	14.0	64.3	24.0
No	23.1	56.0	18.8	38.5	7.6	30.4
A little	36.5	32.5	44.7	47.5	28.0	45.6

These findings leave open to question which elements of a high school education are best suited to providing the student with adequate preparation, particularly women students whose occupational goals are different from what is traditionally expected.

F. Earnings as a Factor in Selection 1/

The issue of Earnings is a key factor in the selection of training for women in mixed occupations. Fifty-two percent of Mixed women compared to 37% of Non-traditional and 42% of Traditional women consider Earnings very important. Only 6% of Mixed women considered it not important.

Table XII-o. -- Importance of earnings as a factor in selection of training

Importance of earnings	Student response (percent)		
	Non-traditional	Mixed	Traditional
Very important	36.5	51.5	41.8
Somewhat important	45.7	42.5	44.0
Not important	17.8	6.0	14.2

Clearly women in mixed training, rather than women in non-traditional training, were the group for whom the selection of an occupation was influenced by the amount of money they would be earning. The large percentage (47%) who had considered traditional occupations, presumably business and health occupations, before they decided to enter the mixed occupations suggests that higher earnings was an important consideration in their shift from traditional to mixed occupations.

1/ See Volume II, Chapter VIII, Tables 1 - 7.

In both the Traditional and Non-traditional samples, Earnings were much more important to the Minority students than to their White counterparts. Among Mixed students, however, Earnings were very important to all students, both Minority and White.

Table XII-p. -- Importance of earnings, by students racial/ethnic characteristics

Racial/ethnic group	Percent responding earnings is important		
	Non-traditional	Mixed	Traditional
White	80.5	91.9	84.7
Minority	87.5	88.7	88.8
Black	92.8	90.5	88.7

The degree to which Earnings were important to Minority Mixed students was similar to the degree to which Earnings were important to Minority Non-traditional students and Minority Traditional students. The importance of Earnings for White Mixed students, however, was greater than for either the White Non-traditional students or the White Traditional students.

Earnings are a more important factor in selection (59% very influential) for Mixed women with family incomes less than $15,000, than it is for women whose incomes are over that figure (46%) or who didn't know what their family incomes were (44%).

G. Problems and Difficulties 1/

Data from the chapter, Problems and Difficulties, indicate that the more women in the class, the better adjustment that women make. The advantage of mixed training is that women are able to move out of traditional occupations into a training and employment environment that is not as isolated or as male-dominated as the environment prevalent in non-traditional training and employment.

H. Employment

The percent of Mixed women who are employed is midway between the percent of Traditional and Non-traditional women who are employed.

1/ The Problems and Difficulties questions were only addressed to the non-traditional sample, and not to either the mixed or traditional control sample.

2/ See Volume II, Chapter X, Tables 1 - 13.

Table XII-q. -- Student employment characteristics

Characteristics	Student response (percent)		
	Non-traditional	Mixed	Traditional
Employed	58.0	53.3	47.3
Not employed	42.0	46.7	52.7

Less than half of all Mixed women are employed in jobs that are related to what they are studying, a situation similar to that experienced by Non-traditional women, but unlike the situation experienced by Traditional women.

Table XII-r. -- Relationship of job to training

Job is related to training	Student response (percent)		
	Non-traditional	Mixed	Traditional
Yes	48.3	46.6	59.6
No	51.7	53.4	40.4

This is apparently a product, in part, of whether or not the school is involved in helping the students to get their jobs. More Traditional women (34%) than either Non-traditional women (24%) or Mixed women (24%) are assisted by the school to obtain their jobs.

Table XII-s. -- School assistance in job placement

School helped place student	Student response (percent)		
	Non-traditional	Mixed	Traditional
Yes	24.0	24.4	34.2
No	76.0	75.6	65.8

The results of the schools assistance in helping Mixed women obtain a job is virtually the same as for Non-traditional women.

Table XII-t. -- School assistance in job placement, by relationship of job to training

Job is related (percent)	Non-traditional	Mixed	Traditional
	School helped place student		
Yes	66.1	66.7	84.4
No	33.9	33.3	15.6
	School did not help place student		
Yes	42.9	40.7	46.5
No	57.1	59.3	53.5

Where the school helped in job placement, two-thirds of the non-traditional and mixed jobs were related. Eighty-four percent of traditional jobs were related. Where the school did not help, the percentages of jobs that were related to their area of training were about the same for each group at 43%, 41%, and 47%, respectively. In other words, the likelihood of women in any classification obtaining a related job, if she sought one herself, is about the same. If the school helps she is more likely to obtain a job related to her training, but she is much more likely to obtain such a job if she is in traditional training than if she is in mixed or non-traditional training.

I. Alternatives Occupations Considered by Women 1/

More Mixed women (77%) considered alternative occupations than either Non-traditional (73%) or Traditional (67%) women.

Table XII-u. -- Consideration of alternative occupation

Considered alternative	Student response (percent)		
	Non-traditional	Mixed	Traditional
Yes	72.6	76.7	67.4
No	27.4	23.3	32.6

1/ See Volume II, Chapter XI, Tables 1 - 9.

Of the alternatives that Mixed women considered, 37% examined other mixed occupations, but 47% considered traditional occupations, which is as large a percentage of women considering traditional occupations as in the traditional sample.

Table XII-v. -- Typology of alternative occupations considered by students

Typology of alternative	Percent of those considering an alternative occupation		
	Non-traditional	Mixed	Traditional
Non-traditional	30.8	16.0	12.6
Mixed	35.6	36.6	39.5
Traditional	33.6	47.4	47.8

A comparatively small 16% considered non-traditional occupations. It is likely that some Mixed women had moved from their original choice in the traditional occupations to similar occupations in mixed areas that offered broader opportunities.

Somewhat fewer Mixed women considered professional occupations than either Traditional or Non-traditional women and markedly fewer considered non-traditional occupations than did Non-traditional women. On the other hand, slightly more Mixed women considered non-traditional occupations than

Table XII-w. -- Occupational fields of alternatives considered by students

Alternative occupations considered	Percent of those considering alternatives		
	Non-traditional	Mixed	Traditional
Professional	34.1	30.0	33.8
Trade and industrial, technical, agriculture	25.8	15.8	12.9
Business	16.0	22.7	19.5
Health	17.5	20.9	22.8
Distributive	1.3	2.1	4.6
Other	5.3	8.5	6.3

did Traditional women. Business occupations were considered more often by Mixed women than by any other group. With the high percentage of Mixed women who considered traditional occupations and the large number in the sample enrolled in mixed Business occupations (52%), it would seem logical that many Mixed women had considered traditional Business occupations and

then selected Business occupations in the mixed category. The mixed occupations usually pay higher salaries, an issue we have seen of particular importance to Mixed women. Health, another occupation that employs many Mixed and Traditional women is considered more often by Mixed (21%) than by Non-traditional women (18%) and less often than by Traditional women (23%). Consideration of Distributive occupations is low, although most such occupations are in mixed classifications.

Forty percent of Traditional women who considered an alternative occupation considered an alternative in the mixed occupations. This is equal to 24% of the entire Traditional sample including those persons who did not consider alternatives. If this proportion were extended to all Traditional women enrolled in AVTS nationally, another 55,000 women who entered traditional training might have, with some additional support and encouragement,

Table XII-x. -- Typology of alternative occupations considered by students, by percent of total sample

Type of alternatives	Non-traditional	Mixed	Traditional
	(percent)		
Non-traditional alternative	20.2	11.5	7.7
Mixed alternative	23.4	26.3	24.0
Traditional alternative	22.1	34.1	29.1
Alternative missing or unclassifiable	5.2	3.8	5.2
Did not consider alternative	29.1	24.3	34.0

entered mixed training. This potential mixed occupation pool is equal to 52% of the women already in mixed training. Were this potential fulfilled the percentage of women in each of the training groups (assuming no shift from the Non-traditional group) would be 9% in Non-traditional training, 44% in mixed training and 47% in traditional training. While it is unlikely that a large number could be moved into Non-traditional training in the immediate future, placing a similar emphasis on mixed occupations could produce a situation where the majority of women would be trained for occupations that are not traditional.

J. Summary

With few exceptions, the demographic characteristics of the three groups were similar. Where they were different, however, urban/rural location, age, and some parental characteristics, the Mixed students characteristics were more similar to the Traditional students.

Traditional and Mixed students were similar in the percentage who had been in vocational education in high school, particularly in the percentage who had been enrolled in business curriculum. The high school curricula of the Non-traditional and Mixed women were similar in terms of the percentages of women who had had a college preparatory curriculum and who had had extensive background in math and science. Unlike both other groups, the Mixed group had fewer women in general education.

A relatively greater number of Mixed women felt that high school had prepared them than the Non-traditional women, but significantly fewer Mixed women felt prepared by high school compared to Traditional women. This trend of greater effectiveness of educational services for Traditional students than for either the Non-traditional or Mixed students, is repeated in the response of the Mixed women to effectiveness of counseling techniques. They generally felt less influenced by the techniques than the Traditionals, but usually more influenced than the Non-traditionals. In some cases, such as group counseling, career orientation, job site visits, and visits from representatives of industry, Mixed women felt as little influenced as did the Non-traditional women.

On the issue of the school providing assistance in job placement, the Mixed and Non-traditional students were again assisted to a lesser degree than Traditional students. The schools, therefore, were more successful than the students in finding jobs related to their study, and Mixed and Non-traditional women acquired relatively fewer jobs which were related to their area of study than did the Traditional students.

Mixed students are receiving fewer or less effective services from their schools. Perhaps the reason the services are less effective for the Mixed women is that these women are more dissatisfied (based on their identification of their "Most Important Event") with a traditional role.

The Mixed women tend to be more decisive in their career choice; are more likely to choose college preparatory curricula with strong math and science backgrounds; and more likely to choose vocational education with a substantial number continuing in their field (mixed) in postsecondary school (50%). Fewer choose the general curriculum. More of these women explored alternatives than either the Non-traditional or the Traditional women, and more were dissatisfied with whatever they had chosen originally and were ready to move to something new in postsecondary school than the Traditional women. They are also more interested in higher earnings which cannot be provided by most of the Traditional occupations.

The Mixed women, like the Non-traditional women, seem to rely on men teachers when they explore fields which are dominated by men. And yet, there is still a substantial amount of influence from women teachers and counselors which indicates that they are still more traditional than the women in non-traditional occupations.

This, of course, is speculation based on only a preliminary analysis. The total picture, however, suggests that there is a large number of women who are seeking a role other than the traditional one, and the patterns are sufficiently consistent to support the contention that the Mixed women are a separate group with characteristics that differ both from the Traditional and the Non-traditional women.

The mixed occupations offer areas which require skills in math and science, in business and sales, and in management. This range is great enough to offer something to women who are seeking different roles from the traditional ones,but who are insecure about how far into the non-traditional fields they are able or desire to go. Mixed opportunities would permit women to move through the accounting and business data processing fields to the more non-traditional fields such as scientific data processing, which is rapidly expanding. By moving into some of these mixed fields, the Mixed women will provide role models for other women with math and science abilities to move into more technical areas, some of which are in mixed fields (dental, chemical, and health technicians) and some of which are in the non-traditional areas (engineering and scientific technicians). By moving into these fields where they would be working with more men employees, these women will provide role models for women considering moving further into the non-traditional neutral areas 1/ such as appliance repair, air conditioning installation, and drafting. The mixed occupations offer opportunities in wholesale trades and marketing which can lead to exciting opportunities for advancement into management, and which, in most cases, pay considerably more than most traditional jobs. Most of these mixed occupations are neutral in their image and expectations, so that women entering them will not experience the problems identified by those women who are now entering the masculine non-traditional occupations.

Women in mixed occupations, by providing role models, can open more neutral non-traditional occupations to other women seeking new roles and opportunities and can offer a new way for women to expand their opportunities and their incomes without expecting them, overnight, to eliminate barriers that have been in existence for generations.

1/ For further explanation, see Chapter I, Introduction.

APPENDICES

Appendix A

Methodology

Data for women students in vocational education by detailed training classifications were not available at the time this study was started in 1975. The enrollment data collected by Office of Education from vocational education schools, although it is collected by detailed training classification, did not include enrollment by sex for 1974.

In 1974, however, the Office for Civil Rights (OCR) collected enrollment data from Area Vocational Technical Schools (AVTS) by sex and racial/ethnic group, and by detailed training classification. An AVTS may be a technical school, a vocational technical division of a junior college, or a specialized vocational school serving a large geographic area (often part or all of a metropolitan area or a group of rural counties.) The data available from the AVTS were particularly useful for our survey because, by definition, they offer two-year courses designed to qualify persons for employment.

The data available from the Office for Civil Rights (OCR) were based on a national survey of 1,500 of the 2,500 AVTS in the country. Six hundred and forty-three of the schools provided vocational technical education at the postsecondary level. These 643 postsecondary AVTS, originally selected by OCR, constitute our sampling frame. Schools selected by OCR represented those for which OCR had not determined compliance to Title VI of the Civil Rights Act of 1964. 1/ Because of this objective, the OCR sampling of AVTS includes a larger proportion of all schools in the South (67%), where more schools had been recently established, than in the North Central (61%) and West (61%); and a very small sample of schools in the Northeast (22%). 2/

A. Sample Selection

1. Schools/Non-traditional Students

The 643 postsecondary schools in the OCR survey had enrollment totaling 221,807 women identified by their race/ethnicity and their detailed training program. Training classifications were reported by code number from Vocational Education and Occupations, OE-80061, (July 1969). Nine percent (19,815) of the women were enrolled in non-traditional training programs (in which 0 to 25% of the students enrolled nationally were women). In order to select schools for our survey, we first needed to determine the location of women in non-traditional training. We found that a great many schools had no women in non-traditional training; some had only a handful. Therefore, to increase the cost-effectiveness of the survey, schools that reported less than ten women students in training for non-

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1/ Holmes, Peter E., Enforcement of Civil Rights Statutes in Area Vocational Technical Schools, May 1974. Paper presented at the annual meeting of State Directors of Vocational Education, Washington, DC, May 1974.

2/ U.S. Census, Major Regions.

traditional occupations among the 643 AVTS were not considered for inclusion in the survey. Approximately 87% of all Non-traditional women students identified in the OCR data were enrolled in the remaining 280 schools.

Based on expected administrative and student response rates and the desire to have a sample large enough to analyze for racial/ethnic groups and possible regional differences, all 280 schools with ten or more Non-traditional women were asked to participate in the study. Each school was sent a letter explaining the purpose and design of the survey and asked if they were willing to cooperate in the survey by distributing the questionnaire. Ninety-four schools agreed to participate in the survey. The response rate from each region was approximately equal. The 94 responding schools had an estimated enrollment of 4,000 to 5,000 Non-traditional women students. An expected response rate of 25% would have produced an estimated 1,000 - 1,250 returns. In order to ensure the largest possible response from Minority students and the widest possible geographic distribution, all 94 schools willing to participate were included, and all women enrolled in non-traditional training in these 94 schools were designated to receive a questionnaire. The number of questionnaires sent to each school was derived from the number of students enrolled in each non-traditional course in 1974 with an additional adjustment upward of 15%. Although the OCR data were 2 years old at the time the questionnaires were mailed, we assumed that there has been no dramatic changes in the enrollments in these AVTS. Because of the recent rapid growth of vocational education (11.6 million enrolled in 1972, 13.5 million enrolled in 1974), we were predicting that these schools would have an even higher enrollment (15%) at the time of our mailout than that indicated by 1974 OCR data. 1/

2. Control Sample

The control sample was designed to meet several objectives:

(1) to provide a sample of students from a wide variety of training programs

(2) to make the distribution of questionnaires as simple as possible for the participating schools

(3) to produce a sample large enough to include a wide geographic distribution of students and a sample of Minority students large enough for analysis

In the control courses from the OCR sample of 643 postsecondary schools there were 202,002 women students, 63,544 (31.5%) in mixed courses (women in vocational training programs where 25.1% - 75.0% of the enrollees nationally were women) and 138,458 (68.5%) in traditional courses (women in vocational training programs where 75.1% - 100% of the enrollees nationally are women). (See Appendix A, Table A-4.) There were 51 training classifications

1/ Vocational and Technical Education, Selected Statistical Tables, FY 1974 and FY 1972, U.S. Department of Health, Education and Welfare, OE, BOAE, June 1975, June 1973.

mixed vocational courses and 33 classifications of traditional courses included in the sampling. We decided to select our control from each of the 94 participating schools. The geographic distribution of the 94 schools included both urban and rural schools from every region. Given the number of participating schools it was not possible to control for the Minority component.

In order to reduce bias and selectivity, the courses were randomly selected among the mixed and traditional courses offered (nationally) and among the major vocational areas, i.e., Distributive Education, Clerical Occupations, Health Occupations, etc. Each school was randomly assigned four courses--two from among the courses taught at the school from the mixed classifications and two from the traditional classifications. Ninety to 100 questionnaires per school were sent to be distributed among the four courses. Where possible, no more than one course from any of the major occupational areas was required from any one school. Since the mixed courses tend to have fewer students per school than the traditional courses, the ratio of Mixed to Traditional students in the sample was expected to be close to that of the universe (32% to 68%).

This method was designed to assure randomization of courses while reducing the task load for the school administrators and instructors, so that each school would have a minimum number of classes to which they would have to distribute questionnaires. This method also avoided their having to randomly select the control sample from their own files, which would have entailed considerable work.

The random selection of courses did not always produce an expected student enrollment of 90-100 students. For schools where this enrollment was not reached, enrollment data were adjusted for increases since 1975 in order to reach as many students as possible. This occurred in 11% of the urban schools and 32% of the rural schools. For schools where more than 100 students were enrolled in the selected courses, a maximum of 100 questionnaires were distributed among the four courses in proportion to their total enrollment.

B. Distribution of Survey Instruments

Each of the 94 schools which consented to participate was sent a packet including a letter of instruction, a complete list of non-traditional training programs, and questionnaires (see Appendix B), adequate to cover the estimated number of Non-traditional students enrolled in programs at their school. The schools were asked to distribute these questionnaires to students in the specified programs and in any other non-traditional courses on the list that had been established from the 1974 OCR survey.

The schools were also asked to distribute a second color-coded set of questionnaires to the designated number of students in each of the four assigned control courses (two traditional and two mixed). 1/

1/ The following color coded questionnaires were distributed: green for students in non-traditional vocational training; yellow for educational personnel; white for controls.

C. Follow-Up

Four weeks after mailing, all schools were contacted by telephone asking them to urge students who had not responded to complete and return the questionnaires. Each participating school was asked whether the estimated number of Non-traditional students was close to accurate. Eighteen schools indicated that too many questionnaires had been received, six reported needing extra copies to cover all women in non-traditional vocational training. The requested copies were sent.

A second round of telephone calls was made three weeks later in order to obtain as many questionnaires as possible.

D. Response Rate

1. School Response

Although the response from participating schools was lower than expected, the hoped-for geographic distribution did occur. Of the 280 original schools with 10 or more Non-traditional women, 173 (62%) were urban and 107 (38%) were rural. Among the final 81 schools from which questionnaires were returned, 53 (65%) were urban and 28 (35%) were rural.

The Regional 1/ distribution of schools in the sample was also similar to the original 280 schools in the OCR sample that had more than 10 women enrolled in non-traditional training.

Table AA. -- Regional representation of schools participating in the student survey compared to selected Office for Civil Rights sample of selected AVTS

Schools	Region		
	Northeast/ North Central	South	West
	(percent)		
280 original schools (OCR Sample)	29.3	42.9	27.9
81 responding schools	29.6	38.3	32.1

2. Student Response

Twenty three hundred control instruments were returned, approximately 1,650 from Traditional and 650 from Mixed students-- providing a control sample of 72% Traditional and 28% Mixed. This compared well with the data on the control which indicated an expected ratio of 68% Traditional and 32% Mixed.

Eight hundred and sixty useable forms were returned from women in non-traditional training.

1/ U.S. Census, Major Regions.

The response rate from control students was much higher than originally expected. This is likely due to the fact that drawing from four classes in each school meant that a large percentage of students received the questionnaire simultaneously in the classroom. Returns of large numbers from a single school or class from a single mail delivery indicated that perhaps class time was used to complete the form.

We had assumed the schools had more difficulty distributing the non-traditional forms, and that group response was not possible for the women in non-traditional training classes. In most cases, there were fewer than six women in classes that were predominantly men, and, therefore, class time allotted for filling out the forms would not have been practical. Therefore, since the Non-traditional women had to complete the forms individually and on their own time, fewer responded.

Since the response rate for the control students was so much higher, it was not necessary to computerize all responses in order to obtain an adequate sample. Response forms were given a log number in order of their return. Responses were then selected at random, based on the log numbers; one control response was selected for each non-traditional response which was computerized. An extra 170 responses were randomly selected from the Mixed group to bring the sample of Mixed students to a size large enough for preliminary analysis.

There was an insufficient response to enable us to analyze each racial/ethnic group separately, however analysis of Blacks, and "All Minorities" (including Blacks) was possible.

3. Response Distribution

Tables showing the distribution of women students in the national OCR sample by broad and detailed classification and our sample are in the Appendix. (See Tables A-1 - A-7.)

Fifty-three courses were represented in our non-traditional sample, 31 in our mixed sample, and 23 in our traditional sample. (See Tables A-5 - A-7.) Although the traditional sample had the lowest number of courses, this is because so few courses are defined as traditional. Only 33 courses in the National sample were traditional, compared to 72 non-traditional programs and 52 mixed programs. (See Tables A-1 - A-3.)

In each of the samples there is a higher concentration of students in some of the broad classifications than there were in the National sample taken by OCR. Except in the mixed sample, this is not due to over-sampling in the programs with the largest enrollments. If we compare National enrollment in the five largest programs in the non-traditional, traditional, and mixed categories with our samples, we find these courses well represented in the non-traditional and traditional samples, however, 3 of the 5 largest programs in the mixed sample are somewhat overrepresented. (See Tables A-9 - A-11). For the traditional and non-traditional, the overrepresentation in broad classifications is simply due to the accumulation of students from several courses.

Students in the sample were also well represented by grade level. Fifty-three percent to 56% of each of the responding samples were first year students, and 44% to 47% were second year students. (See Table A-12.)

E. Educational Personnel Survey

In the second stage of our survey, we contacted educational personnel named by the Non-traditional students as very influential in their decision to enroll in their present training programs.

As responses from the women students were received, names and addresses were catalogued and coded (for tracking responses) and a questionnaire was mailed to the school personnel. The questionnaire contained a cover letter explaining the objectives of the study and how the individual had been selected for the survey. (See Educational Personnel Questionnaire, Appendix B.)

Students named 132 secondary school personnel (including 4 junior high school personnel) and 158 postsecondary school personnel. Three to four weeks after the initial mailing, if no response had been received, a reminder letter was sent to the educational personnel repeating our request for information and enclosing a duplicate of the questionnaire. Three to five weeks later a postcard reminder was mailed encouraging the educational personnel to complete and return the forms.

Code numbers were removed from the completed forms to assure confidentiality. Seventy-eight returns (59%) were received from the secondary school personnel and 88 (56%) from the postsecondary personnel. Twenty additional forms that were returned were incomplete, and therefore not useable.

F. Data Analysis

The data analysis was designed to test a set of hypotheses, some of which have been shown to be true for Non-traditional professional women; other hypotheses were derived from previous educational and sociodemographic research, and still others were new ideas formulated by the research team. Most hypotheses were stated in the form of the expected differences between the sample groups.

Data are presented in two forms. For each difference between the groups which was shown to be significant, a brief summary table for the non-traditional and traditional samples showing the percentage differences is placed within the body of the chapter. In Volume II more detailed back-up tables for each chapter show the raw sample data and percent distributions for all three groups: non-traditional, mixed, and traditional. The mixed chapter is organized somewhat differently. Summary tables are included in the text with data from the three samples. Footnotes at the beginning of each section of the Mixed chapter refer the reader to the appropriate back-up tables for previous chapters and contained in Volume II.

Straight counts of students responses to each variable with 3 or more optional responses were tested for validity of the hypothesis (through rejection of the null hypothesis) using the chi square statistic. Those with less than 3 response options, were tested to determine if the difference between two proportions was significant. The standardized normal variable used to test for significance was:

$$Z = \frac{\frac{X_1}{N_1} - \frac{X_2}{N_2}}{\sqrt{\left(1/N_1 + 1/N_2\right) P(1-P)}}$$

X_1 = occurrence in sample 1

N_1 = size of sample 1

$$P = \frac{X_1 + X_2}{N_1 + N_2}$$

When two variables are cross-tabulated, the results for each sample group shown in a single contingency table were tested by using the X^2. Since it was not possible to compare contingency tables or X^2 statistics among sample groups, the test for the difference between two proportions was utilized. For example, we could not test directly whether there was a greater differential in fathers occupational distribution among various age groups of Non-traditional students, than among age groups of Traditional students. However, we could test for differences in the proportions of fathers in a particular occupational status between Non-traditional and Traditional students of a particular age group. We could test for 20 year olds to see whether there was a significantly higher proportion of students whose fathers were blue collar workers in non-traditional than traditional samples.

Furthermore, using this test for the difference between two proportions, we could test whether there was a difference in a particular response for one age group compared to all other groups or between two age groups. Often the entire distribution was not significantly different, but the difference between particular groups within the distribution was significant. As an example, difference in a variable tested against the age distribution might not be significant for the entire distribution, but the variable might be significantly different for women 30 years of age and older. This difference might occur for Non-traditional women between those 30 years of age and those who are younger, it might also be tested between Non-traditional and Traditional women 30 years of age and older.

Data comparing non-traditional and traditional samples were tested for significance. Data for educational personnel and data on the Mixed students were not so tested. The former was not tested due to insufficient sample size, and the latter, partly due to sample size, but more importantly, due to the nature of the data itself. (For explanation see Chapter XII, Women in Mixed Vocational Training.)

We would emphasize that our analyses are preliminary. The intent of the study was to raise questions for further research, and to establish hypotheses which need further research to substantiate interpretations of data included herein.

Table A-1. -- Non-traditional vocational training programs, by detailed classification, by percent of students in the training nationally that are women: Office of Civil Rights sample of selected postsecondary AVTS, United States, 1974

Training programs	Percent women	Number of women enrolled
Metallurgy occupations	0.0	0
Heavy equipment maintenance	0.0	2
Diesel mechanics	0.2	9
Air conditioning repair	0.3	21
Maritime occupations	0.4	5
Plumbing and pipefitting	0.4	3
Masonry	0.4	3
Carpentry	0.5	34
Tool and die making	0.5	3
Refrigeration repair	0.6	12
Machine tool operations	0.7	16
Electrical occupations	0.8	43
Machine shop	0.8	120
Aircraft maintenance	0.8	15
Agriculture mechanic repair	0.8	13
Business machines maintenance	1.0	5
Automotive technician	1.2	40
Plastics occupations	1.3	2
Welding and cutting	1.3	173
Instrumentation technology	1.4	8
Radio and television repair	1.4	197
Body and fender repair	1.5	74
Automotive sales	1.5	7
Mechanical technology	1.5	182
Electromechanical technology	1.6	23
Auto mechanics and other automotive training	1.7	286
Metalworking occupations	1.8	55
Electrical technology	1.8	75
Machine shop	1.8	120
Electronic technology	1.9	367
Fire and fire safety technology	2.2	59
Appliance repair	2.4	28
Leatherworking	2.7	1
Blue print reading	3.0	9
Electronic occupations	3.1	120
Construction and maintenance	3.2	60
Petroleum technology	3.6	4
Fireman training	3.9	81
Industrial technology	4.1	101
Civil technology	4.3	169
Woodworking occupations	4.5	40
Instrument maintenance	5.6	26
Ground operations	5.9	3
Nuclear technology	6.5	12
Forestry technology	6.8	109
Forestry	7.2	78

Table A-1. -- Non-traditional vocational training programs, by detailed classification, by percent of students in the training nationally that are women: Office of Civil Rights sample of selected postsecondary AVTS, United States, 1974 (Continued)

Training programs	Percent women	Number of women enrolled
Architectural technology	7.8	379
Metallurgic technology	8.1	42
Drafting	8.2	960
Commercial pilot training	8.8	111
Small engine repair	9.4	149
Aircraft operations	9.6	9
Oceanographic technology	9.6	125
Waste and water technology	11.0	39
Agricultural supplies	11.4	276
Environmental technology	11.7	79
Custodial	12.0	60
Agricultural production	12.5	673
Police science	13.9	2,570
Aeronautical technology	14.1	157
Wholesale trade, other	14.1	31
Agricultural resources	14.5	136
Foreman and/or supervisory	14.5	543
Law enforcement	14.9	1,830
Commercial fishery	15.1	63
Agricultural products	20.0	68
Scientific data technology	20.7	455
Graphic arts	20.9	903
Agriculture, other	21.0	619
Supervisory occupations	21.4	4,751
Mortuary science	23.3	65
Agricultural technology	24.2	248

Table A-2. -- Mixed vocational training programs, by detailed classification, by percent of students in the training nationally that are women: Office of Civil Rights sample of selected postsecondary AVTS, United States, 1974

Training programs	Percent women	Number of women enrolled
Distributive education, other	25.1	1,662
Trade and industry, other	25.6	1,690
Retail trade	26.8	623
Chemical technology	27.5	237
Commercial photography	27.9	665
Material support	28.2	24
General merchandise	28.4	2,313
Ornamental horticulture	28.9	903
Recreation and tourism	29.5	809
Opthalmic	30.1	90
Hotel and lodging	30.4	353
Barbering	30.5	159
Real estate	31.0	2,919
Upholstering	31.7	168
Insurance	31.8	88
Fabric maintenance	31.8	7
Food service (sales)	32.4	379
Quantity foods	34.2	680
Miscellaneous technology	37.3	3,924
Business data processing	38.1	8,417
Office technology	40.5	375
Electroencephalographic technology	41.3	52
Electrocardiographic technology	42.2	43
Dental, other	42.6	26
Air pollution technology	43.7	135
Environmental health	44.2	327
Finance and credit	44.4	851
Accounting and computing occupations	44.9	12,184
Other public service	45.3	675
Dental lab technology	45.7	509
Other personal services	47.3	220
Food distribution	49.5	383
Inhalation therapy	50.6	1,022
Advertising services	51.0	789
Commercial art occupations	51.4	2,916
Transportation sales	53.0	929
Information and communications occupations	53.1	1,329
Personnel training	55.6	1,169
Family relations	57.2	303
Nuclear medicine technology	58.8	21
Rehabilitation, other	59.7	148
Food management	59.7	1,002

Table A-2. -- Mixed vocational training programs, by detailed classification, by percent of students in the training nationally that are women: Office of Civil Rights sample of selected postsecondary AVTS, United States, 1974

Training programs	Percent women	Number of women enrolled
Personal services	62.4	53
Radiologic technology	62.6	2,066
Textile products	63.2	668
Radiologic, other	66.0	35
Health related technology	66.7	254
Office occupations, other	67.7	5,015
Health occupations, other	73.3	2,623
Mental health technology	73.5	2,303
Food and nutrition	73.9	671

Table A-3. -- Traditional vocational training programs, by detailed classification, by percent of students in the training nationally that are women: Office of Civil Rights sample of selected postsecondary AVTS, United States, 1974

Training programs	Percent women	Number of women enrolled
Home furnishings	76.4	487
Other medical laboratory technology	76.9	1,906
Housing and home furnishings	78.9	455
Home economics related technology	78.9	243
Medical laboratory assistant	81.4	1,148
Physical therapy	81.9	516
Institutional management	84.1	127
Homemaking, other	84.2	849
Community health aid	85.0	155
Typing and related occupations	85.8	6,544
Filing, office machines	86.3	8,417
Cytology	86.8	79
Consumer education	87.6	758
Homemaking	87.6	4,666
Floristry	87.8	194
Apparel and accounting sales	88.0	1,406
Nursing (associate degree)	89.0	25,544
Care and guidance of children	89.6	5,063
Nursing, other	90.5	2,165
Clothing and textiles	90.5	861
Cosmetology	92.4	3,960
Occupational preparation	92.7	2,221
Nursing assistant	92.9	3,522
Steno/secretarial occupations	93.7	37,689
Occupational therapy	94.2	375
Medical assistant	94.9	2,702
Dental hygiene	95.3	2,732
Child development	96.0	2,560
Dental assistant	96.1	3,847
Practical nursing	96.2	16,054
Clothing, management	96.9	1,084
Histology	100.0	54
Home management	100.0	75

Table A-4. -- Student enrollment in vocational training programs nationally and in the student survey sample, by broad classification of study and N-M-T category: Students from Office of Civil Rights sample of selected AVTS, United States, 1974, and a selected sample of students in AVTS, United States, Spring 1976

Broad classification of study	Student enrollment					
	Non-traditional		Mixed		Traditional	
	National	Survey sample	National	Survey sample	National	Survey sample
	(percent)					
Agriculture	9.4	2.2	1.4	1.5	0.0	0.0
Distributive	8.6	2.9	16.5	24.6	1.2	1.6
Health	0.3	0.0	14.6	9.7	43.9	41.5
Home economics	0.0	0.0	3.1	2.4	13.9	6.2
Business	24.0	11.9	44.3	51.8	38.0	47.5
Technical	27.0	40.9	7.8	3.3	0.2	0.2
Trade and industrial	30.7	42.1	12.4	6.6	2.9	2.9
	(number)					
Agriculture	1,863	19	903	7	0	0
Distributive	1,700	25	10,489	111	1,600	10
Health	65	--	9,265	44	60,799	254
Home economics	--	--	1,976	11	19,206	38
Business	4,751	102	28,138	234	52,650	291
Technical	5,354	352	4,925	15	243	1
Trade and industrial	6,082	362	7,848	30	3,960	18

Table A-5. -- Number of women in non-traditional training programs, by Office of Education detailed classifications: Sample of AVTS students, United States, Spring 1976

Program	Number of women in the sample		Program	Number of women in the sample	
	Number	Percent		Number	Percent
Agriculture	19	2.2	Technology (Continued)		
Agricultural production	5		Forestry technology	11	
Agricultural resources	3		Oceanographic technology	13	
Forestry	8		Police science	127	
Agriculture, other	3		Water and waste water technology	3	
Business	102	11.9			
Supervisory and administrative management	102		Trade and Industrial	362	42.1
			Air conditioning installation	1	
			Aircraft operations	5	
			Appliance repair	2	
Distributive	25	2.9	Body and fender repair	1	
Automotive sales	4		Auto mechanics and other automotive training	18	
Wholesale trade	7		Blueprint reading	2	
Distributive, education, other	14		Business machine maintenance	4	
Health	0	--	Commercial fisher occupations	1	
Home Economics	0	--	Carpentry	3	
			Custodial services	1	
Technology	352	40.9	Diesel mechanics	1	
Aeronautical technology	2		Drafting	90	
Agricultural technology	8		Electronic occupations	6	
Architectural technology	43		Radio and television	3	
Automotive technology	3		Foreman, supervisor and management development	14	
Civil technology	14		Graphic arts occupations	57	
Electrical technology	3		Law enforcement training	127	
Electronic technology	32		Metalworking occupations	2	
Environmental control	6		Machine shop	4	
Industrial technology	7		Machine tool operation	1	
Instrumentation technology	2		Welding and cutting	11	
Mechanical technology	8		Tool and die making	1	
Nuclear technology	1		Metallurgy occupations	2	
Petroleum technology	3		Small engine repair	1	
Scientific data processing	63		Woodworking occupations	4	
Commercial pilot training	2				
Fire and fire safety technology	1				

Table A-5. -- Number of women in non-traditional training programs, by Office of Education detailed classifications: Sample of AVTS students, United States, Spring 1976 (Continued)

Additional classifications that are non-traditional, but did not appear in the sample	
Program	Program
Agriculture	Trade and Industrial (Continued)
Agricultural supplies/services	Masonry
Agricultural mechanics	Plumbing and pipefitting
Agricultural products	Fabric maintenance services
	Leather working
Health	Plastics occupations
Mortuary science	Fireman training
	Instrument maintenance and repair
Technology	Maritime occupations
Electromechanical technology	Refrigeration
Metallurgical technology	
Trade and Industrial	
Aircraft maintenance	
Electrical occupations	
Ground operations	
Heavy equipment maintenance	

Table A-6. -- Number of women in mixed vocational training programs, by Office of Education detailed classifications: Sample of AVTS students, United States, Spring 1976

Program	Number of women in the sample		Program	Number of women in the sample	
	Number	Percent		Number	Percent
Agriculture	7	1.5	Technology	15	3.3
Ornamental horticulture	7		Chemical technology	5	
			Health-related technology	6	
Health	44	9.7	Office-related technology	3	
Radiologic technology	19		Miscellaneous technical occupations, other	1	
Mental health technology	13				
Inhalation therapy technology	4		Distributive	111	24.6
Dental laboratory technology	3		Advertising services	1	
Opthalmic	1		Finance and credit	7	
Miscellaneous health occupations, other	4		Food services	5	
			General merchandise sales	40	
Business	234	51.8	Real estate sales	13	
Accounting and computing occupations	149		Recreation and tourism	20	
Business data processing	84		Transportation	12	
Personnel training and related occupations	1		Retail trade	13	
			Home Economics	11	2.4
Trade and Industrial	30	6.6	Food management, production, and services	8	
Commercial art occupations	21		Foods and nutrition	2	
Quantity food occupations	3		Family relations	1	
Textile production and fabrication	2				
Upholstering	2				
Barbering	1				
Other personal services	1				

Additional classifications that are mixed, but did not appear in the sample

Health
- Electroencephalograph technician
- Electrocardiograph technician
- Environmental health
- Nuclear medical technology
- Dental, other
- Rehabilitation, other
- Radiologic, other
- Miscellaneous health occupations, other

Trade and Industrial
- Commercial photography occupations
- Public service occupations, other
- Trade and industrial occupations, other

Technology
- Agricultural-related technology
- Air pollution technology

Distributive
- Food distribution
- Hotel and lodging
- Insurance
- Personal services

Business
- Information communications
- Materials support
- Office occupations, other

156

Table A-7. -- Number of women in traditional training programs, by Office of Education detailed classifications: Sample of AVTS students, United States, Spring 1976

Program	Number of women in the sample		Program	Number of women in the sample	
	Number	Percent of total		Number	Percent of total
Agriculture	0	0			
Distributive	10	1.6	Business and Office	291	47.5
Floristry	7		Filing, office machines, and clerical occupations	68	
Apparel and accessories sales	3		Stenographic, secretarial, and related occupations	196	
Health	254	41.5	Typing and related occupations	27	
Dental assistant	25				
Dental hygienist (associate degree)	16				
Medical laboratory laboratory technology	19		Technology	1	0.2
Nursing (associate degree)	92		Home economics and related technology	1	
Practical (vocational) nursing	60				
Nursing assistant or aide	6				
Occupational therapy	1		Trade and Industrial	18	2.9
Medical assistant	26		Cosmetology	18	
Medical laboratory assistant	9				
Community health aide	0				
Home Economics	38	6.2			
Homemaking	1				
Child development	19				
Clothing and textiles	8				
Institutional and home management	1				
Occupational preparation	1				
Care and guidance of children	7				
Clothing management, production and services	1				

Additional classifications that are traditional, but did not appear in the sample

Health	Home Economics
Cytology	Consumer education
Histology	Home furnishing
Physical therapy	Home management
Nursing, other	Housing and home furnishing
	Homemaking, other

Table A-8. -- Regional representation of participating schools: Office of Civil Rights sample of selected AVTS, United States, 1974, and a selected sample of students in AVTS, United States, Spring 1976

Schools	Region					
	Northeast/ North Central	South	West	Northeast/ North Central	South	West
	(percent)			(number)		
280 original schools (OCR sample)	29.3	42.9	27.9	81	120	78
81 participating schools	29.6	38.3	32.1	24	31	26

Table A-9. -- Sample representation of the five non-traditional training programs with the largest enrollment: Students from Office of Civil Rights sample of selected AVTS, United States, 1974, and a selected sample of students in AVTS, United States, Spring 1976

Training program	National enrollment	Survey sample	National enrollment	Survey sample
	(percent)		(number)	
Business supervisory	24.0	11.9	4,751	102
Law enforcement	9.2	14.8	1,830	127
Police science	13.0	14.8	2,570	127
Drafting	4.8	10.5	960	90
Graphic arts	4.6	6.6	903	57

Table A-10. -- Sample representation of the five mixed training programs with the largest enrollment: Students from Office of Civil Rights sample of selected AVTS, United States, 1974, and a selected sample of students in AVTS, United States, Spring 1976

Training program	National enrollment	Survey sample	National enrollment	Survey sample
	(percent)		(number)	
Accounting and computing	19.2	33.0	12,184	149
Business data processing	13.2	18.6	8,417	84
Real estate	4.6	2.9	2,919	13
Commercial art	4.6	4.6	2,916	21
General merchandise	3.6	8.8	2,313	40

Table A-11. -- Sample representation of the five traditional training programs with the largest enrollment: Students from Office of Civil Rights sample of selected AVTS, United States, 1974, and a selected sample of students in AVTS, United States, Spring 1976

Training program	National enrollment	Survey sample	National enrollment	Survey sample
	(percent)		(number)	
Stenographic and secretarial occupations	27.2	32.0	37,689	196
Nursing (associate degree)	18.4	15.0	25,544	92
Practical nursing	11.6	9.8	16,054	60
Filing and office machines	6.1	11.1	8,417	68
Typing and related occupatings	4.7	4.4	6,544	27

Table A-12. -- Students in the sample, by grade level and N-M-T category: Sample of AVTS students, United States, Spring 1976

Grade level in postsecondary school	Non-traditional	Mixed	Traditional	Non-traditional	Mixed	Traditional
	(percent)			(number)		
First year	53.1	55.0	56.6	432	238	336
Second year	46.9	45.0	43.4	382	195	258
Missing				46	19	18

APPENDIX B

Questionnaires

Rj associates

January 5, 1976

Dear Student:

Under a contract from the Office of Adult and Occupational Education, U.S. Department of Health, Education, and Welfare (DHEW), Rj Associates, a woman-owned consulting firm, is undertaking a study designed to better understand the occupational choices of young women, and eventually to assist in increasing occupational options for all women.

The purpose of the research is to pinpoint those factors which influence the decisions of young women to enter various vocational educational programs.

We would like you to fill out the attached questionnaire, which will provide much needed information, and return it to us in the stamped pre-addressed envelope. Your answers together with those from other women in similar vocational training programs will help others to benefit from your experiences.

You are not required to participate in this study, but we would sincerely appreciate your participation.

Sincerely,

Roslyn D. Kane

Roslyn D. Kane
Project Director and
President
Rj Associates

RDK/lr
encl.

1018 Wilson Boulevard, Arlington, Virginia 22209 (703) 524-3360

POSTSECONDARY WOMEN IN VOCATIONAL EDUCATION
Student Questionnaire - CTRL

OMB No. 51-S75088
Expires 7/76

Please respond to all questions.

I. Background Information

1. What grade are you now in? (check one) [13]

   a. ☐ 13th or first year of college

   b. ☐ 14th or second year of college

2. How old are you?

   _____ (14-15)

3. Which of the following best describes your racial/ethnic group? (check one) [16]

   a. ☐ Black/Negro

   b. ☐ Caucasian/White

   c. ☐ Hispanic*

   d. ☐ Asian or Pacific Islander**

   e. ☐ American Indian or Alaskan Native***

4. What is (was) your father's usual occupation? Select among the following. Circle one and place an "F" before your selection. If his occupation is not listed among the examples, please fill in the blank marked "Other."

Occupational List

GROUP A - CLERICAL - bank teller, bookkeeper, cashier, mail carrier, office machine operator, payroll receiving, shipping or stock clerk, secretary, telephone operator, typist...

GROUP B - SKILLED WORKER - baker, construction man, crane man, foreman, machinist, mechanic, repairman...

GROUP C - AGRICULTURE - farmer, farm laborer, farm manager...

GROUP D - LABORER except farm - construction laborer, freight, stock or material handler, garbage collector, gardener, lumberman, car washer, warehouseman...

GROUP E - MANAGER and/or ADMINISTRATOR - administrator, bank officer, buyer, contractor, department head, manager, owner of business...

GROUP F - SEMI-SKILLED WORKER - assembler, checker, dry cleaning operator, gas station attendant, laundry operator, machine operator, packer, bus, truck, or taxi driver, welder...

GROUP G - PROFESSIONAL or TECHNICAL WORKER accountant, clergyman, computer programmer, draftsman, engineer, health technician, lawyer, nurse, performer, physician, scientist, social worker, teacher...

GROUP H - SALES WORKER - advertising agent, insurance agent, real estate broker, sales clerk, salesman...

GROUP I - SERVICE WORKER - barber, childcare worker, elevator operator, fireman, food service worker, guard hairdresser, janitor, maid, police...

Other _____ (specify father's occupation) [17]

5. Does your mother work? [18] ☐ Yes ☐ No

6. What is (was) your mother's usual occupation? Select one from the Occupational List above, draw an "X" through your selection and place an "M" before it (M~~clerk~~). If her occupation is not listed above, fill in the blank marked "Other."

   Other (specify mother's occupation) _____ ☐ 19

*Hispanic includes: Mexican, Puerto Rican, Cuban, other Spanish origin.
**Asian or Pacific Islander includes: persons having origins in any of the original peoples of the Far East, Southeast Asia, or the Pacific Islands.
***American Indian or Alaskan Native includes: persons having origins in any of the original peoples of North America.

7. During your lifetime, about how many years has (or did) your mother work? (check one) 20

1. ☐ Under 5 years
2. ☐ Between 5 and 9 years
3. ☐ Between 10 and 14 years
4. ☐ 15 or more years

8. How much education did your parents complete? (check one for each parent)

	MOTHER 21		FATHER 22
a. 8th grade or less	a. ☐	(0-8)	a. ☐
b. Did not finish high school	b. ☐	(9-11)	b. ☐
c. High school graduate	c. ☐	(12)	c. ☐
d. Some college	d. ☐	(13-15)	d. ☐
e. College graduate or beyond	e. ☐	(16 or more)	e. ☐

9. In your estimation which of the following is closest to your household's total income? (check one) [23]

1. ☐ Less than $5,000
2. ☐ $5,001 - $10,000
3. ☐ $10,001 - $15,000
4. ☐ $15,001 - $20,000
5. ☐ $20,001 & over
6. ☐ Don't know

II. EDUCATIONAL EXPERIENCES

10. What was your major curriculum in high school? (check one) (24-25)

1. Vocational:
   - a. ☐ Agricultural occupations
   - b. ☐ Business or commercial occupations
   - c. ☐ Distributive education
   - d. ☐ Health occupations
   - e. ☐ Home economics occupations
   - f. ☐ Technical occupations
   - g. ☐ Trade or industrial occupations
   - h. ☐ Other vocational occupations
2. ☐ General
3. ☐ College Preparatory

11. How many semesters of mathematics and science did you take in high school?

Course	Number of Semesters	Course	Number of Semesters
A. Mathematics	☐ 26	D. Physics	☐ 29
B. Biology	☐ 27	E. Earth Science	☐ 30
C. Chemistry	☐ 28	F. General Science	☐ 31
		G. Other Science	☐ 32

12. Below is a list of educational programs. Please check the program that most closely resembles the one in which you are now enrolled. (33-34)

	Title
1	Ornamental Horticulture
2	Advertising Services
3	Apparel and Accessories Sales
4	Finance and Credit
5	Floristry
6	Food Distribution
7	Food Services
8	General Merchandise Sales
9	Hotel and Lodging
10	Insurance
11	Personal Services
12	Real Estate Sales
13	Recreation and Tourism
14	Transportation
15	Retail Trade
16	Dental Assistant
17	Dental Hygienist (Associate Degree)
18	Dental Laboratory Technology
19	Cytology
20	Histology
21	Medical Laboratory Assistant
22	Other Medical Laboratory Technology
23	Nursing (Associate Degree)
24	Practical (Vocational) Nursing
25	Nursing Assistant or Aide
26	Occupational Therapy
27	Physical Therapy
28	Radiologic Technology
29	Nuclear Medical Technology
30	Ophthalmic
31	Environmental Health
32	Mental Health Technology
33	Electroencephalograph Technician
34	Electrocardiograph Technician
35	Inhalation Therapy Technology
36	Medical Assistant
37	Community Health Aide
38	Homemaking
39	Child Development
40	Clothing and Textiles
41	Consumer Education
42	Family Relations
43	Foods and Nutrition
44	Home Management
45	Housing and Home Furnishing
46	Occupational Preparation
47	Care and Guidance of Children
48	Clothing Management, Production and Services
49	Food Management, Production and Services
50	Home Furnishing
51	Institutional and Home Management
52	Accounting and Computing Occupations
53	Business Data Processing
54	Filing, Office Machines, and Clerical Occupations
55	Information Communications
56	Materials Support
57	Personnel Training and Related Occupations
58	Stenographic, Secretarial, and Related Occupations
59	Typing and Related Occupations
60	Chemical Technology
61	Agricultural-Related Technology
62	Health-Related Technology
63	Office-Related Technology
64	Home Economics-Related Technology
65	Air Pollution Technology
66	Commercial Art Occupations
67	Commercial Photography Occupations
68	Barbering
69	Cosmetology
70	Other Personal Services
71	Quantity Food Occupations
72	Textile Production and Fabrication
73	Upholstering
74	Other _____

13. Did your high school courses prepare you for the program in which you are now enrolled? [35]

a. ☐ Yes b. ☐ A Little c. ☐ No

14. Using the scale below, how would you rate each of the following as influencing your decision to enter your present training program? (Enter 3, 2, or 1 in each space provided.)

3 = very important
2 = somewhat important
1 = not important

A. Am likely to earn a good income ☐ 36

B. Have interest or ability in the area ☐ 37

C. Attracted by working conditions (steady work, many available jobs, opportunity for advancement, etc.) ☐ 38

D. Had been working and wanted to change or improve work skills. ☐ 39

E. Other (Please Specify)_____ 40 ☐ rating

15. Were the following persons available to discuss your vocational decisions? For each person and level of schooling listed please circle:

1 if the person was generally available for discussion
2 if the person was generally not available for discussion
6 if no such person was employed at your school

		Teachers		Counselors	
		Men	Women	Men	Women
(41-44)	Jr. High School*	1 2 6	1 2 6	1 2 6	1 2 6
(45-48)	Sr. High School**	1 2 6	1 2 6	1 2 6	1 2 6
(49-52)	Post High School	1 2 6	1 2 6	1 2 6	1 2 6

16. Using the scale below, please rate the influence of the following methods in helping you decide to enroll in your present educational program. (Enter 3,2,1 or 6 in each space provided.)

3 = very important
2 = somewhat important
1 = not important
6 = tried to change my mind

A. Individual counseling or discussion ☐ 53

Group Counseling

B. Mixed groups of men and women ☐ 54

C. Groups of women only ☐ 55

D. Career education program ☐ 56

E. Vocational testing program ☐ 57

F. Career orientation program ☐ 58

G. Visiting potential job sites ☐ 59

H. Having representatives from industry visit your class ☐ 60

I. Other_____ (specify)

_____

61 ☐ rating

*Grades 7-9 **Grades 10-12

17(1). Using the scale below, please rate the influence of the following persons in helping you decide to enroll in your present educational program. (Enter 3, 2, 1, or 6 in each space provided.)

3 = very important
2 = somewhat important
1 = not important
6 = tried to change my mind

A. [ ] Mother 62 B. [ ] Father 63 C. [ ] Husband 64

		Man	Woman
D/E.	Other relatives	D. [ ] 65	E. [ ] 66
F/G.	Friends	F. [ ] 67	G. [ ] 68
H/I.	Teachers: Jr. High School	H. [ ] 69	I. [ ] 70
J/K.	Sr. High School	J. [ ] 71	K. [ ] 72
L/M.	Post High School	L. [ ] 73	M. [ ] 74
N/O.	Counselors: Jr. High School	N. [ ] 75	O. [ ] 76
P/Q.	Sr. High School	P. [ ] 77	Q. [ ] 78
R/S.	Post High School	R. [ ] 79	S. [ ] 80
	Other School Personnel:		
T/U.	Jr. High School	T. [ ] 6	U. [ ] 7
V/W.	Sr. High School	V. [ ] 8	W. [ ] 9
X/Y.	Post High School	X. [ ] 10	Y. [ ] 11
AA/BB.	Other (Please Specify)_____	AA. [ ] 12	BB. [ ] 13

17(2). If any one of those persons in 17(1) was more important than all others, please circle your response (for example, (D.) or (Q.), etc.). (14-15)

17(3). If any event, rather than person, influenced your decision, briefly describe. 16

_____

_____

20. A. Did you ever seriously consider training for any other alternative occupation? [36] ☐ Yes ☐ No

B. If yes, what alternatives did you consider? (Please Specify)

(37-46)

21. In addition to attending school:

A. Are you presently working? [47] ☐ Yes ☐ No

B. If yes, is your job related to the occupation for which you are studying? [48] ☐ Yes ☐ No

C. Did the school you are attending help you get the job? [49] ☐ Yes ☐ No

When you have completed the questionnaire, fold it in thirds, insert it in the preaddressed envelope, and mail directly to:

RJ Associates, Inc.
1018 Wilson Blvd.
Arlington, Va. 22209

You will need no stamps for the mailing.

Thank you for your help.

POSTSECONDARY WOMEN IN VOCATIONAL EDUCATION
Student Questionnaire - NTVT

OMB No. 51-S75088
Expires 7/76

Please respond to all questions.

I. Background Information

1. What grade are you now in? (check one) [13]

a. ☐ 13th or first year of college

b. ☐ 14th or second year of college

2. How old are you?

_____ (14-15)

3. Which of the following best describes your racial/ethnic group? (check one) [16]

a. ☐ Black/Negro

b. ☐ Caucasian/White

c. ☐ Hispanic*

d. ☐ Asian or Pacific Islander**

e. ☐ American Indian or Alaskan Native***

4. What is (was) your father's usual occupation? Select among the following. Circle one and place an "F" before your selection. If his occupation is not listed among the examples, please fill in the blank marked "Other."

Occupational List

GROUP A - CLERICAL - bank teller, bookkeeper, cashier, mail carrier, office machine operator, payroll receiving, shipping or stock clerk, secretary, telephone operator, typist...

GROUP B - SKILLED WORKER - baker, construction man, crane man, foreman, machinist, mechanic, repairman...

GROUP C - AGRICULTURE - farmer, farm laborer, farm manager...

GROUP D - LABORER except farm - construction laborer, freight, stock or material handler, garbage collector, gardener, lumberman, car washer, warehouseman...

GROUP E - MANAGER and/or ADMINISTRATOR - administrator, bank officer, buyer, contractor, department head, manager, owner of business...

GROUP F - SEMI-SKILLED WORKER - assembler, checker, dry cleaning operator, gas station attendant, laundry operator, machine operator, packer, bus, truck, or taxi driver, welder...

GROUP G - PROFESSIONAL or TECHNICAL WORKER accountant, clergyman, computer programmer, draftsman, engineer, health technician, lawyer, nurse, performer, physician, scientist, social worker, teacher...

GROUP H - SALES WORKER - advertising agent, insurance agent, real estate broker, sales clerk, salesman...

GROUP I - SERVICE WORKER - barber, childcare worker, elevator operator, fireman, food service worker, guard hairdresser, janitor, maid, police...

Other _____ (specify father's occupation) [17]

5. Does your mother work? [18] ☐ Yes ☐ No

6. What is (was) your mother's usual occupation? Select one from the Occupational List above, draw an "X" through your selection and place an "M" before it (M~~clerk~~). If her occupation is not listed above, fill in the blank marked "Other."

Other (specify mother's occupation) _____ ☐ 19

*Hispanic includes: Mexican, Puerto Rican, Cuban, other Spanish origin.
**Asian or Pacific Islander includes: persons having origins in any of the original peoples of the Far East, Southeast Asia, or the Pacific Islands.
***American Indian or Alaskan Native includes: persons having origins in any of the original peoples of North America.

Rj associates

January 5, 1976

Dear Student:

Under a contract from the Office of Adult and Occupational Education, U.S. Department of Health, Education and Welfare (DHEW), Rj Associates, a woman-owned consulting firm is undertaking research designed to better understand the occupational choices of young women, and eventually assist women to increase the occupational options available to them. The purposes of the research are to identify those factors that influence the decisions of young women to enter vocational educational programs which traditionally have been dominated by men; to identify the various people who may have helped in making that choice; and to develop information on their experiences in those programs.

Since you are one of the relatively few women in the United States who have enrolled in a "non-traditional" vocational program, your participation in the study is the key to its success.

We would like you to fill out the attached questionnaire, which will provide much needed information, and return it to us in the stamped pre-addressed envelope. Your answers together with those from other women in similar vocational training programs will help others to benefit from your experiences.

You are not required to participate in this study, but we would sincerely appreciate your participation.

Sincerely,

Roslyn D. Kane

Roslyn D. Kane
Project Director and
President
Rj Associates

RDK/lr
encl.

1018 Wilson Boulevard, Arlington, Virginia 22209 (703) 524-3360

7. During your lifetime, about how many years has (or did) your mother work? (check one) 20

1. ☐ Under 5 years
2. ☐ Between 5 and 9 years
3. ☐ Between 10 and 14 years
4. ☐ 15 or more years

6. How much education did your parents complete? (check one for each parent)

	MOTHER 21		FATHER 22
a. 8th grade or less	a. ☐	(0-8)	a. ☐
b. Did not finish high school	b. ☐	(9-11)	b. ☐
c. High school graduate	c. ☐	(12)	c. ☐
d. Some college	d. ☐	(13-15)	d. ☐
e. College graduate or beyond	e. ☐	(16 or more)	e. ☐

9. In your estimation which of the following is closest to your household's total income? (check one) 23

1. ☐ Less than $5,000
2. ☐ $5,001 - $10,000
3. ☐ $10,001 - $15,000
4. ☐ $15,001 - $20,000
5. ☐ $20,001 & over
6. ☐ Don't know

II. EDUCATIONAL EXPERIENCES

10. What was your major curriculum in high school? (check one) (24-25)

1. Vocational:
   - a. ☐ Agricultural occupations
   - b. ☐ Business or commercial occupations
   - c. ☐ Distributive education
   - d. ☐ Health occupations
   - e. ☐ Home economics occupations
   - f. ☐ Technical occupations
   - g. ☐ Trade or industrial occupations
   - h. ☐ Other vocational occupations
2. ☐ General
3. ☐ College Preparatory

11. How many semesters of mathematics and science did you take in high school?

Course	Number of Semesters	Course	Number of Semesters
A. Mathematics	☐ 26	D. Physics	☐ 29
B. Biology	☐ 27	E. Earth Science	☐ 30
C. Chemistry	☐ 28	F. General Science	☐ 31
		G. Other Science	☐ 32

12. Below is a list of educational programs. Please check the program that most closely resembles the one in which you are now enrolled. (33-34)

	Title
1	Agricultural Production
2	Agricultural Supplies/Services
3	Agricultural Mechanics
4	Agricultural Products
5	Agricultural Resources
6	Forestry
7	Automotive Sales
8	Wholesale Trade
9	Mortuary Science
10	Supervisory and Administrative Management
11	Aeronautical Technology
12	Agricultural Technology
13	Architectural Technology
14	Automotive Technology
15	Civil Technology
16	Electrical Technology
17	Electronic Technology
18	Electromechanical Technology
19	Environmental Control
20	Industrial Technology
21	Instrumentation Technology
22	Mechanical Technology
23	Metallurgical Technology
24	Nuclear Technology
25	Petroleum Technology
26	Scientific Data Processing
27	Commercial Pilot Training
28	Fire and Fire Safety Technology
29	Forestry Technology
30	Oceanographic Technology
31	Police Science
32	Water and Waste Water Technology
33	Air Conditioning Installation and Repair
34	Appliance Repair
35	Body and Fender Repair
36	Auto Mechanics & Other Automotive Training
37	Air Craft Maintenance
38	Air Craft Operations
39	Ground Operations
40	Blueprint Reading
41	Business Machine Maintenance
42	Commercial Fishery Occupations
43	Carpentry
44	Heavy Equipment Maintenance
45	Masonry
46	Plumbing and Pipefitting
47	Custodial Services
48	Diesel Mechanics
49	Drafting
50	Electrical Occupations
51	Electronic Occupations
52	Radio & Television
53	Fabric Maintenance Services
54	Foreman, Supervisor & Management Development
55	Graphic Arts Occupations
56	Instrument Maintenance and Repair
57	Maritime Occupations
58	Metalworking Occupations
59	Machine Shop
60	Machine Tool Operation
61	Welding & Cutting
62	Tool and Die Making
63	Metallurgy Occupations
64	Plastics Occupations
65	Fireman Training
66	Law Enforcement Training
67	Refrigeration
68	Small Engine Repair
69	Leather Working
70	Woodworking Occupations
71	Other _____ (Please Specify)

13. Did your high school courses prepare you for the program in which you are now enrolled? [35]

a. ☐ Yes b. ☐ A Little c. ☐ No

14. Using the scale below, how would you rate each of the following as influencing your decision to enter your present training program? (Enter 3, 2, or 1 in each space provided.)

3 = very important
2 = somewhat important
1 = not important

A. Am likely to earn a good income ☐ 36

B. Have interest or ability in the area ☐ 37

C. Attracted by working conditions (steady work, many available jobs, opportunity for advancement, etc.) ☐ 38

D. Had been working and wanted to change or improve work skills. ☐ 39

E. Other (Please Specify)_____ 40 ☐ rating

15. Were the following persons available to discuss your vocational decisions? For each person and level of schooling listed please circle:

1 if the person was generally available for discussion
2 if the person was generally not available for discussion
6 if no such person was employed at your school

		Teachers		Counselors	
		Men	Women	Men	Women
(41-44)	Jr. High School*	1 2 6	1 2 6	1 2 6	1 2 6
(45-48)	Sr. High School**	1 2 6	1 2 6	1 2 6	1 2 6
(49-52)	Post High School	1 2 6	1 2 6	1 2 6	1 2 6

16. Using the scale below, please rate the influence of the following methods in helping you decide to enroll in your present educational program. (Enter 3,2,1 or 6 in each space provided.)

3 = very important
2 = somewhat important
1 = not important
6 = tried to change my mind

A. Individual counseling or discussion ☐ 53

Group Counseling

B. Mixed groups of men and women ☐ 54

C. Groups of women only ☐ 55

D. Career education program ☐ 56

E. Vocational testing program ☐ 57

F. Career orientation program ☐ 58

G. Visiting potential job sites ☐ 59

H. Having representatives from industry visit your class ☐ 60

I. Other_____ (specify)

_____

61 ☐ rating

*Grades 7-9 **Grades 10-12

17(1). Using the scale below, please rate the influence of the following persons in helping you decide to enroll in your present educational program. (Enter 3, 2, 1, or 6 in each space provided.)

3 = very important
2 = somewhat important
1 = not important
6 = tried to change my mind

A. [ ] Mother 62 B. [ ] Father 63 C. [ ] Husband 64

		Man	Woman
D/E.	Other relatives	D. [ ] 65	E. [ ] 66
F/G.	Friends	F. [ ] 67	G. [ ] 68
H/I.	Teachers: Jr. High School	H. [ ] 69	I. [ ] 70
J/K.	Sr. High School	J. [ ] 71	K. [ ] 72
L/M.	Post High School	L. [ ] 73	M. [ ] 74
N/O.	Counselors: Jr. High School	N. [ ] 75	O. [ ] 76
P/Q.	Sr. High School	P. [ ] 77	Q. [ ] 78
R/S.	Post High School	R. [ ] 79	S. [ ] 80
	Other School Personnel:		
T/U.	Jr. High School	T. [ ] 6	U. [ ] 7
V/W.	Sr. High School	V. [ ] 8	W. [ ] 9
X/Y.	Post High School	X. [ ] 10	Y. [ ] 11
AA/BB.	Other (Please Specify)_____	AA. [ ] 12	BB. [ ] 13

17(2). If any one of those persons in 17(1) was more important than all others, please circle your response (for example, (D.) or Q., etc.). (14-15)

17(3). If any event, rather than person, influenced your decision, briefly describe. 16

_____

_____

17(4). If in question 17(1) you put 3 after any of the following: Teacher(s) Counselor(s), or other School Personnel, please list their names and addresses below: [17]

Name _____ Position (teacher, counselor, etc.) _____

his or her school name _____

his or her school address _____

Name _____ Position (teacher, counselor, etc.) _____

his or her school name _____

his or her school address _____

18. Are you the only woman in your technical training classes? [18]

☐ Yes ☐ No

If no, how many others are there? [19]

☐

(Insert appropriate number.)

19. In your technical training classes have you experienced any of the following? (Please respond to each question)

	Yes	Somewhat	No	
A. Men students find it difficult to adjust to women students.				[20]
B. Teachers find it difficult to adjust to women students.				[21]
C. Teachers pay more attention to the male students.				[22]
D. Counselors pay more attention to the male students.				[23]
E. Teachers expect women students to perform at a higher level than men students.				[24]
F. On the whole, the men students are better prepared than the women students.				[25]

19.(continued)

	Yes	Somewhat	No	
If in 19F above you marked either Yes or Somewhat, do you feel that is because in high school:				
G. Men students had more science classes.				[26]
H. Men students had more mathematics classes.				[27]
I. Men had taken more trade and/or technical subjects.				[28]

J-P. Other reasons (Please Specify) _____

(29-35)

20. A. Did you ever seriously consider training for any other alternative occupation? [36] ☐ Yes ☐ No

B. If yes, what alternatives did you consider? (Please Specify)

(37-46)

21. In addition to attending school:

A. Are you presently working? [47] ☐ Yes ☐ No

B. If yes, is your job related to the occupation for which you are studying? [48] ☐ Yes ☐ No

C. Did the school you are attending help you get the job? [49] ☐ Yes ☐ No

D. Was it easier for the young men in your class to get a training-related job than it was for you? [50] ☐ Yes ☐ No ☐ Don't Know

When you have completed the questionnaire, fold it in thirds, insert it in the preaddressed envelope, and mail directly to:

RJ Associates, Inc.
1018 Wilson Blvd.
Arlington, Va. 22209

You will need no stamps for the mailing.

Thank you for your help.

Rj associates

Under a contract from the Adult and Occupational Education Office of the Office of Education, Rj Associates, a woman-owned consulting firm, is conducting a study of young women training for occupations that traditionally have been dominated by men.

This study has been designed to identify those factors which have influenced the decision of these women to enter such training, some characteristics of these young women, and what their experiences have been in the programs.

In a questionnaire recently distributed to young women in nontraditional vocational training in postsecondary Area Vocational Training Schools, at least one woman student indicated that you influenced her decision to undertake this training. It is because you have been successful in assisting a young woman to enter such training that we are asking you to contribute to this study. Your responses and the responses of other educational personnel like you are essential to open the dialogue which can lead to devising comprehensive systems of guidance and counseling, to assist young women to succeed in the broadest possible range of programs of their choice, and in their career progressions.

Inasmuch as relatively few women have moved into nontraditional fields, and even fewer have been influenced by school personnel, information which only you can provide is basic to this study. We urge you to respond by completing the enclosed questionnaire. Only aggregate data will be released from this study. No names will be attached to your responses.

For your convenience, we are enclosing a stamped, self-addressed envelope in which you can return the completed questionnaire. We are eagerly awaiting your response. Please return the questionnaire and any enclosures before June 15, 1976.

Sincerely,

Roslyn D. Kane

Roslyn D. Kane
Project Director and
President

RDK/ed
Encl.

1018 Wilson Boulevard, Arlington, Virginia 22209 (703) 524-3360

WOMEN IN NONTRADITIONAL VOCATIONAL EDUCATION

School Personnel Questionnaire

OMB #51-S75088
Expires 7/76

Please respond to all questions

Background Information

1. Sex: a. ☐ Male
b. ☐ Female

2. Which of the following best describes your racial/ethnic group?
a. ☐ Black/Negro
b. ☐ White/Caucasian
c. ☐ Hispanic*
d. ☐ Asian or Pacific Islander**
e. ☐ American Indian or Alaskan Native***

3A. What is your present job title or position?
a. ☐ Teacher
b. ☐ Counselor
c. ☐ Principal
d. ☐ Other (specify)_____

_____

3B. If you checked teacher, please enter your field of instruction in the space below.

_____

4. In the appropriate spaces below, please check:

	Under 3 years	Between 3 & 5 years	Between 6 & 10 years	Over 10 years
A. How long have you been in your present job?				
B. How long have you worked in an educational setting?				

5. In the appropriate spaces below, indicate in what fields you specialize (education, psychology, etc.) and the highest degree(s) you have attained for each specialty.

Field of Specialization	BA/BS	MA/MS	Ph.D	Additional credits beyond highest degree
A.				
B.				
C.				

*Hispanic includes: Mexican, Puerto Rican, Cuban, other Spanish origin.
**Asian or Pacific Islander includes: persons having origins in any of the original peoples of the Far East, Southeast Asia, or the Pacific Islands.
***American Indian or Alaskan Native includes: persons having origins in any of the original peoples of North America.

6. Do you or your school utilize any of the following?

	Yes	No	Don't Know
A. Vocational Aptitude Tests	☐	☐	☐
B. Interest Inventories	☐	☐	☐
C. Other similar instruments	☐	☐	☐

7. If you or your school utilize such tests please list the names of these tests below:

_____ _____

_____ _____

_____ _____

8. Are students:

	Yes	No	Don't Know
A. Required to take these tests?	☐	☐	☐
B. Encouraged to take these tests?	☐	☐	☐
C. Given these tests at their own request?	☐	☐	☐

9. If such tests are not mandatory in your school, about how many women students do you estimate take such tests? (Please check one)

a. ☐ Under 10% b. ☐ Under 25% c. ☐ 25% to 50%

d. ☐ 51% to 75% e. ☐ 76% to 100%

10A. In assisting young women to consider areas for training, how useful are these tests for each of the following training areas?

Training Area	Very Useful	Moderately Useful	Not Useful
Nontraditional Vocational Training[1/]			
Other Vocational Training			

B.&C. If you checked either very useful or moderately useful in the question above, please identify these tests in the space(s) below:

B. Very Useful Tests

(1)_____

(2)_____

C. Moderately Useful Tests

(1)_____

(2)_____

1/ For the purpose of the study, a vocational training program is defined as nontraditional if, nationally, fewer than 25.1% of the students enrolled in the program are women. See back cover for a detailed list of programs.

11. In order to encourage qualified young women to consider training for a nontraditional occupation, has your school:

	Yes	No
(1) Developed its own program?		
(2) Used a program developed elsewhere?		
(3) Allowed or encouraged individual teachers/counselors to develop their own program?		
(4) Left it up to individual teachers/ counselors to work with a student as the need occurs?		

12A. If you checked yes in answer to (1) or (3) in question 11 above, please enclose with your completed questionnaire a brief description of the program and any special materials the school or you have developed.

B. If you checked yes in answer to (2) above, please enclose with your completed questionnaire a brief description of the program and in the space below enter the name and address where additional information about the program may be obtained.

Name_____ Name_____

Address_____ Address_____

_____ _____

13A. Are there other resource materials you would use if funds were available? ☐ Yes ☐ No

B. If yes, please list them below:

	Title	Publisher
(1)	_____	_____
(2)	_____	_____
(3)	_____	_____

14. In your experience, which of the following usually initiates the idea of a woman being trained for a nontraditional occupation? (Check the appropriate box.)

a. ☐ Teacher
b. ☐ Counselor
c. ☐ Other School Personnel
d. ☐ Parents
e. ☐ Peers
f. ☐ Student Herself
g. ☐ Other (Specify) _____
h. ☐ Don't Know

15. Please check which in your estimation is the usual response to be expected from the following persons when a young woman considers training for nontraditional occupations.

	(1) Very Discouraging	(2) Somewhat Discouraging	(3) Somewhat Encouraging	(4) Very Encouraging
Women friends				
Mother				
Father				
Husband or men friends				
Men vocational counselors				
Women vocational counselors				
Men teachers				
Women teachers				

16. Please rate the importance of the following in helping women decide to train for nontraditional occupations.

	Has a negative effect	Has no usefulness	Is somewhat useful	Is very useful
A. Individual counseling or discussion				
Group counseling: B. Groups of men and women				
C. Groups of women only				
D. Career education programs				
E. Career orientation program				
F. Visiting job sites				
G. Having a representative from industry visit the class				
H. Consultation with parents				

I. Other (Please specify)_____

_____

(usefulness)

17. Do you think women presently training for nontraditional occupations need special support activities (examples listed in #18) tailored specifically to their needs? ☐ Yes ☐ No

18. Indicate below what activities are undertaken in your school and how you would rate their importance in supporting women in nontraditional training. Please rate each program whether or not it is available in your school.

Support Activity	Available		Rating		
	yes	no	very important (3)	somewhat important (2)	not important (1)
Individual counseling					
Group counseling:					
Mixed groups of men and women					
Groups of women only					
Counseling with potential employers					
Securing parental support					
Talking with women who have sucessfully "made it" in nontraditional jobs					
Other (Please specify)_____					

19. Please rate the following as to their importance in influencing a young woman to train for or remain in a nontraditional occupation. (Enter 2, 1, or 0 in each space provided.)

2 = very important
1 = somewhat important
0 = not important

A. Occupation has good earnings ☐

B. Enjoys working with men ☐

C. Interest or ability in the occupational area ☐

D. Attracted by working conditions (steady work, many available jobs, opportunity for advancement, etc.) ☐

E. Had been working and wants to change or improve work skills. ☐

F. Other (Please specify)_____ ☐

_____

20. Since 1970, about how many women have you encouraged to train for a nontraditional occupation? (Enter an approximate number.) [ ]

How many have actually followed the advice offered? [ ]

21. Based upon your experience, approximately how many additional young women in your school should be encouraged to train for a nontraditional occupation?

A. Number [ ]

B. Percent (of women in your school) [ ]

22. Would you list qualities and/or skills which you feel are necessary for a woman to succeed in nontraditional vocational training which are different from those necessary for women to succeed in training more traditionally selected by women?

Please list:

A. _____

B. _____

C. _____

D. _____

E. _____

F. _____

Please return the completed questionnaire and the requested enclosures in the preaddressed envelope to:

Rj Associates, Inc.
1018 Wilson Blvd.
Arlington, Va. 22209

Thank you for your help.

Nontraditional Vocational Training Programs*

U.S. Office of Education Vocational Education Classification

Agri-Business Occupations

- Agriculture Production
- Agriculture Supplies/Services
- Agriculture Products
- Agricultural Resources
- Agriculture Mechanics
- Forestry

Marketing & Distribution Occupations

- Automotive Sales
- Wholesale Trade
- Miscellaneous Distributive Education

Health Occupations

- Mortuary Science

Business & Office Occupations

- Business Supervisory Occupations

Technical Occupations

- Aeronautical Technology
- Agricultural & Agricultural Related Technology
- Architectural Technology
- Automotive Technology
- Civil Technology
- Electrical Technology
- Electronic Technology
- Electromechanical Technology
- Environmental Control Technology
- Industrial Technology
- Instrumentation Technology
- Mechanical Technology
- Metallurgical Technology
- Nuclear Technology
- Petroleum Technology
- Scientific Data Technology
- Commercial Pilot Training
- Fire & Fire Safety Technology
- Forestry Technology
- Oceanographic Technology
- Police Science
- Water & Waste Water Technology
- Miscellaneous Technical Occupations

Trade & Industrial Occupations

- Air Conditioning Installation & Repair
- Appliance Repair
- Body and Fender Repair
- Auto Mechanics & Other Automotive Training
- Air Craft Maintenance
- Air Craft Operations
- Blueprint Reading
- Business Machine Maintenance
- Commercial Fishery
- Carpentry
- Heavy Equipment Maintenance
- Masonry
- Plumbing and Pipefitting
- Custodial Service
- Diesel Mechanics
- Drafting
- Electrical Occupations
- Electronic Occupations
- Radio & Television Repair
- Fabric Maintenance Services
- Foreman, Supervisor & Management Development
- Graphic Arts Occupations
- Instrument Maintenance & Repair
- Maritime Occupations
- Metalworking Occupations
- Machine Shop
- Machine Tool Operation
- Welding & Cutting
- Tool & Die Making
- Metallurgy Occupations
- Plastics Occupations
- Fireman Training
- Law Enforcement Training
- Refrigeration
- Small Engine Repair
- Stationary Energy Sources Occupations
- Leather Working
- Woodworking Occupations

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* For the purpose of the study, a vocational training program is defined as nontraditional if, nationally, fewer than 25.1% of the students enrolled in the program are women.

APPENDIX C

Glossary

AVTS -- Area Vocational Technical Schools are departments or divisions of junior colleges, technical or vocational schools, specialized high schools, or separate departments of a high school approved by the State Board of Education and used primarily for providing vocational education courses in at least five occupational fields for the purpose of preparing persons for employment.

Broad classification -- Overall classification of vocational education courses by their subject area. Areas include: Agriculture, Distributive Education, Health, Home Economics, Business and Office, Technical, and Trade and Industrial.

Detailed classification -- Specific categorization of vocational education training programs from the classification system developed by the Office of Education. (For the listing, See Appendix A, Tables 1 - 3 and 5 - 7).

Feminine image -- A way of describing occupations which, by subjective public opinion, are, and by presumption will continue to be, held by women. A classification system developed by Saul D. Feldman for professional women in Escape from the Doll's House, (Carnegie Foundation for the Advancement of Teaching, 1974).

High Status Blue Collar Occupations -- Includes craftsmen, foremen, and kindred workers as defined by the U.S. Bureau of Census.

High Status White Collar Occupations -- Includes professional, technical, managerial and administrative workers as defined by the U. S. Bureau of Census.

Low Status Blue Collar Occupation -- Includes operatives, laborers, and service workers, as defined by the U. S. Bureau of Census.

Low Status White Collar Occupation -- Includes sales and clerical workers as defined by the U. S. Bureau of Census.

Masculine image -- A way of describing occupations which by subjective public opinion are, and will continue to be, held by men. A classification developed by Saul D. Feldman for professional women in Escape from the Doll's House, (Carnegie Foundation for the Advancement of Teaching, 1974).

Math filter -- A term used to describe the situation where women progressing through junior high and high school take too few math courses and thereby are frequently prevented from advancing in non-traditional professional, and probably non-professional, occupations.

Minority -- Includes the following racial/ethnic groups: Black/Negro, Hispanic, Asian or Pacific Islander, American Indian or Alaskan Native.

Mixed women students -- Women students enrolled in any training program in which, nationally, 25.1 to 75.0% of enrolled students are women.

N-M-T category -- As used in back-up tables: N = Non-traditional women students, M = Mixed women students, T = Traditional women students. (See definitions for each category.)

Neutral image -- A way of describing occupations which, by subjective public opinion, could be held by either men or women. A classification developed by Saul D. Feldman for professional women in Escape from the Doll's House, (Carnegie Foundation for the Advancement of Teaching, 1974.)

Non-traditional (Nt) women students -- Women students enrolled in any training program in which, nationally, 0.0 to 25.0% of enrolled students are women.

North Central -- Includes the following states: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin.

Northeast -- Includes the following states: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont.

Occupational status -- A categorization of occupations, see definition of High Status White Collar, Low Status White Collar, High Status Blue Collar and Low Status Blue Collar.

Region -- Division of the United States into four major parts as defined by the U.S. Bureau of Census. See definitions of Northeast, North Central, South and West.

Rural -- For this report, any school which was not located within a Standard Metropolitan Statistical Areas was defined as rural. Since most schools were non-residential, students attending schools were assumed to reside in the surrounding area.

South -- Includes the following states and district: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia.

Standard Metropolitan Statistical Area (SMSA) -- A county or group of contiguous counties which contain at least one city (central city) with 50,000 or more inhabitants, or twin cities with a combined population of 50,000 or more. The number of designated counties included in the SMSA in addition to the county containing the central city (or cities) are determined by the social and economic integration of those counties with the central city (cities). For specific criteria, see 1970 Census of Population, U. S. Bureau of Census.

Traditional (Trad) women students -- Women students enrolled in any training program in which, nationally, 75.1 to 100% of enrolled students are women.

Urban -- For this report, any school located within a Standard Metropolitan Statistical Area was defined as urban. Since most schools were non-residential, students attending these schools were assumed to reside in the urban area.

West -- Includes the following states: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

APPENDIX D

Statistical Symbols

In testing hypotheses, two tests were used: 1) Chi-Square, and 2) the difference between two proportions. (For details, see Methodology.) Rejection of null hypothesis is indicated in the appropriate tables by footnotes, or asterisks (*) directly in the stub of the table.1/

The level of significance of the test is indicated by the number of (*)'s after the variable in the stub or after the appropriate footnote.

* indicates $p < .05$

** indicates $p < .01$

*** indicates $p < .001$

The following footnote symbols were used to show significance for a Chi-Square Test (x^2):

x^2 - this indicates a rejection of the null hypothesis that the distribution of the specified variable is the same for the non-traditional and traditional samples.

Nt x^2 (Trad x^2) - this indicates a rejection of the null hypothesis that the distribution of the specified variable is the same for two or more subgroups of Non-traditional (Traditional) students.

The following footnote symbols indicate significance for a test of the Differences Between Two Proportions:

*** Asterisks in the stub of the table indicate rejection of the null hypothesis that the proportions for the indicated variable were similar in the non-traditional and traditional samples. The level of significance is indicated by the number of asterisks.

a-a (*b-b*, etc.) - this indicates the rejection of the null hypothesis that the two footnoted proportions are similar.

ø - indicates the rejection of the null hypothesis that the footnoted proportion is similar to the proportion for the combination of all other students in the stratified sample.

1/ Where no footnotes or asterisks in the stub are indicated, either the null hypothesis was not rejected, or no hypothesis was formulated.

OE 009 260

Example:

Student age	Yes	No
17-19	70.6	29.4
20	58.9ø	41.1
21-24	75.9	24.1
25-29	77.5	22.5
30	71.8	28.2

ø *

The above table would indicate that the response of the 20 year olds was significantly different from the response of students of all other ages combined.